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HEALTH SERVICE SUPPORT

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Issued on the authority of the Chief of the Land Staff

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FOREWORD

1. B-GL-343-001/FP-000 *Health Service Support* is issued on the authority of the Chief of the Land Staff.

2. This publication is effective upon receipt and supercedes B-GL-313-001/FP-001, *Medical Services in Battle* (1996-04-30).

3. Suggestions for amendments should be forwarded through normal channels to the Director of Army Doctrine, attention DAD 9-3.

4. Unless otherwise noted, masculine pronouns contained herein refer to both genders.

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CHAPTER 1
INTRODUCTION

SECTION 1
ROLE

GENERAL

1. Military operations are conducted in a geographical area designated as the theatre of operations. The theatre of operations is normally divided into a combat zone (CZ) in which deliberate operations are conducted, and a communications zone (COMM Z) which contains the administrative support, lines of communication, and other agencies that are required for the immediate support and maintenance of the force.

2. Land forces are assigned to an area of operations and include the appropriate command and control headquarters and required Combat Arms, Combat Support Arms and Combat Service Support (CSS).

3. The Canadian Forces may constitute the entire military strength or, more likely, they may form part of a coalition or part of a United Nations force. The size of the force in the area of operations may vary from a brigade group or less, to a fully developed command consisting of army groups, armies, corps, divisions and brigades.

4. The corps is the principal combat formation. Its organization varies depending on the task and consists of a variable number of divisions and other combat, combat support arms, and combat support services. Canadian doctrine at the Corps level is currently based on the United States (US) Model. This includes the health service support provided by the Canadian Forces Medical Services (CFMS) and the Canadian Forces Dental Services (CFDS).

5. The content of this publication is consistent with the administrative system described in B-GL-300-004/FP-001 *Sustainment*, dealing with the fundamentals of support to land forces in an area of operations. Standardization agreements used in the drafting of this publication are listed at Annex A.

ROLE

6. The role of Land Force Health Service Support (HSS) is to conserve the personnel strength of the warfighting force.

7. Conservation of personnel strength takes several forms, including the prevention of illness and injury. During combat, it focuses on the salvage of life and limb. After combat, it involves the rapid return to duty of both the sick and the wounded. Finally, it refers to the evacuation from an area of operations of those who are not expected to return to duty within a reasonable period of time.

SECTION 2
THE HEALTH THREAT

8. Since the end of the cold war, there has been, and likely will continue to be, deployments to widespread locations and environments that cannot be anticipated. The Army requires the adaptability to react to various contingencies and to face previously unforeseen threats. This calls for increased flexibility in doctrine and training, because there is no longer the luxury of basing our actions on a known adversary. The Canadian Army must be prepared to conduct combat operations in a variety of locations and to deal with varying threats from terrorists up to, and including, warfighting. This spectrum of conflict presents a paradox to the Canadian Army in that it must continue to posture its forces to deter war, while at the same time realizing that most future conflicts will likely be of limited intensity. By extension, the HSS System must also structure itself to provide support across the complete spectrum of conflict.

9. The Health threat is the composite of all ongoing or potential enemy actions and environmental conditions that reduce combat effectiveness through wounding, injuring, and /or causing disease. Soldiers are the targets of these threats. Characteristics of modern warfare that define the health threat include the following:

a. Significant increases in wounded casualty densities, causing local or general overload of the health support infrastructure.

b. Enemy combat operations in the friendly rear areas interdicting lines of communication and disrupting

vital combat support and combat service support activities. This seriously impacts on health services' ability to retrieve and evacuate wounded, sick, and injured soldiers and to deliver health care.

c. Prolonged periods of intense continuous operations that tax soldiers to the limits of their physiological and emotional endurance.

d. Premeditated attack upon health organizations, personnel, or medical stores is not anticipated. However, a steady erosion of battlefield health resources will result from increasing levels of combat intensity, enhanced wounding capability of munitions and possible collateral effects of conventional, chemical, or nuclear weapons.

e. Infectious diseases pose a major threat to combat forces.

f. The application of advanced technologies to the enhancement of existing weapons and munitions and the development of totally new weapons systems may provide the health service support system with new diagnostic and treatment challenges.

SECTION 3
MANOEUVRE WARFARE

10. The Canadian army has adopted the manoeuvrist approach to warfare. Manoeuvre warfare as a warfighting philosophy is described as a mind set that seeks to defeat the enemy by shattering his moral and physical cohesion and his ability to fight as an effective co-ordinated whole, rather than destroying him by incremental attrition.

11. Manoeuvre warfare is a concept that concerns itself primarily with attacking the enemy`s critical vulnerability. The key to understanding what this concept entails is to realize that the defeat of an enemy need not always mean physical destruction. The aim of the commander should be to defeat the enemy by bringing about the systematic destruction of the enemy`s ability to react to changing

situations, the destruction of his combat cohesion and most importantly, the destruction of his will to fight.

12. In manoeuvre warfare, far less emphasis is placed on the securing of ground, thus forcing commanders at all levels to think of how to render the enemy incapable of fighting while minimizing friendly casualties.

SECTION 4
CHALLENGES TO THE HEALTH SERVICES

13. Health services must enhance, not inhibit, operational designs. While the health services help establish the limits of what is operationally possible, it is necessary to build a HSS that extends those limits as far as possible. The HSS system must also anticipate health requirements, planning support in advance of stated needs to facilitate tempo and enable the support to the present battle, the next battle, and the battle after next. Since friction, uncertainty and the fog of war make it impossible to anticipate all support requirements, the HSS system must be flexible, adaptable and responsive. It must be able to respond to unplanned demand and to rapidly shift support to enable the commander to exploit opportunities as they arise in the area of operations. In short, it is important to guard against the health services becoming an end unto itself and, instead, ensure that health service support is always focused on the support of operations.

14. As stated earlier, the Canadian army is guided by the philosophy of manoeuvre warfare, an approach to warfighting that emphasizes rapid, focused effort, tactical and operation flexibility, and decentralized adaptation. Due to the fact that this philosophy is focused on the enemy, it is easy to assume that manoeuvre warfare has little to do with the health services. This could not be further from the truth: while HSS units do not directly attack the enemy, their actions have a significant impact on the ability to gain an advantage on the moral plane, generate tempo, and to exploit opportunities.

15. As a result, the HSS system is now not only faced with the difficult tasks of providing health treatment and evacuation on the battlefield, but with the further challenges of:

a. providing this support in ever-increasing areas of operations;

b. having widely dispersed medical and dental resources;

c. providing health service support on a non-contiguous battlefield;

d. having isolated pockets of friendly troops to support;

e. having greatly increased evacuation distances; and

f. experiencing more concentrated casualties in short, more decisive, operations.

SECTION 5
GENERAL MEDICAL SUPPORT POLICIES

MEDICAL CARE

16. Canadian land forces are supported by the Canadian HSS system, except when their size, location or capabilities make this impracticable.

17. In forward areas the initial collection and treatment of the patient is the unit's responsibility. Treatment and movement of patients beyond the unit level is the responsibility of the supporting HSS organization.

EVACUATION POLICY

18. The land force evacuation policy is established by the senior commander in the area of operations, based on the recommendation of the senior medical advisor.

19. The evacuation policy is expressed in a maximum number of days that a patient may be held in treatment facilities at each line of medical support, within the area of operations. Patients who cannot be returned to duty within the time of the evacuation policy are evacuated as soon as their condition and the availability of evacuation means permits.

20. Factors affecting the determination of an evacuation policy include the following:

a. the operational situation;

b. the location and capacity of operational and strategic facilities;

c. the availability of tactical and strategic evacuation resources; and

d. the reconstitution policy and situation.

21. To achieve the maximum effectiveness of HSS resources and the conservation of personnel strength without compromising the mobility and flexibility of manoeuvre formations, the recommended combat zone evacuation policy is two days within brigades and divisions, and seven days within the corps area.

ADMINISTRATIVE RESPONSIBILITY FOR PATIENTS

22. The HSS system is responsible for the feeding, clothing, discipline, general welfare, and the disposal of all patients from the time they come under medical care until they are discharged to duty or evacuated from the theatre of operations.

23. The HSS system is not responsible for the collection and burial of the dead, except for its own dead and those who die while under its care.

STANDARDIZATION

24. Equipment and procedures in use in the CFMS and the CFDS conform, as far as is possible, to those which have been the subject of international agreements to which Canada is a signatory. Listed at Annex A are STANAGS and QSTAGS related to the field HSS system.

25. Formation and force surgeons will issue instructions to standardize medical administration, treatment regimes, dental procedures and HSS training.

ABANDONMENT OF PATIENTS

26. In certain operations, the withdrawal for example, it may be impossible to evacuate all patients. When patients are subject to capture, they are left with the minimum number of medical personnel necessary for their treatment, and only such supplies as are required until the enemy becomes responsible for them.

27. The decision to abandon patients to the enemy is a command responsibility. It is the duty of the senior medical person present to provide the commander with the medical information necessary to arrive at a proper decision.

CHAPTER 2
PATIENT MANAGEMENT

SECTION 1
PATIENT MANAGEMENT

PATIENT MANAGEMENT CONCEPT

1. Patient management is a continuous process of medical care, increasing in complexity by Roles of capability to deal with the clinical needs of the patient. While optimal patient management is never compromised unless dictated by the operational situation, it is necessarily a balance between many conflicting factors, including:

   a. treatment requirements,

   b. evacuation requirements,

   c. resource availability, and

   d. environmental and operational conditions.

2. The basis of a patient management concept is the ability to:

   a. provide effective first aid treatment and life-sustaining procedures immediately following injury or the onset of illness;

   b. protect patients from further injury, including environmental and weapons effects;

   c. document personal particulars of each patient and basic details of the illness or injuries sustained and treatments given;

   d. treat patients as far forward as possible and return to duty as many patients as possible;

   e. evacuate patients as rapidly as possible from the site where the injury occurred to a place of comparative

safety where facilities exist for resuscitation and additional life saving measures;

f. evacuate patients following resuscitation to Role 3 treatment facilities for initial surgery and subsequently to hospitals to the rear or outside the theatre of operations; and

g. provide definitive surgery, long term nursing care, convalescent and rehabilitative care, and other specialist services.

PATIENT MANAGEMENT CONTINUUM

3. **General**. Patient management for CF operations is organized into a continuum of care extending from the Forward Edge of the Battle Area (FEBA) to Canada, including the incorporation of civilian resources where appropriate.

4. **First Aid**. First aid is the emergency or life-saving care given to a sick or injured person when a medically-trained person is not immediately available. As it is care provided to casualties before entering the care of the medical service it is not considered as patient management.

5. Every military member must know and be trained to apply life-saving first aid measures, to restore breathing and heartbeat, to stop bleeding, and to intervene against shock and infection. First aid also includes the application of measures to prevent a victim's condition from becoming worse, and the use of proper methods in moving a victim to a point of relative safety to await care and evacuation by medically trained personnel. Combat first aid may include basic intravenous and morphine therapies applied by non-medical personnel.

6. **Combat Medical Care**. This is the first care provided by trained medical personnel. It is initiated as far forward as feasible and as soon as possible after wounding or onset of illness, usually by the medical assistant forward of the Role 1 medical facility. This includes the skillful application of examining techniques, performance of emergency or life-saving measures, and continual observation and care

to ensure that the airway remains open, that bleeding has been controlled and that shock, infection and further injury are prevented. It also involves the effective use of medical supplies not available to non-medically trained personnel, and arrangement for evacuation.

7. **Emergency Medical Care**. Medical skill and judgement of a higher degree are applied in a relatively safe environment, with time to conduct a more thorough examination and begin a plan of treatment. This focuses on the initial trauma life support (stabilization) of the patient within the capability of Role 1 treatment facilities with no holding capacity. Such care includes:

a. maintenance of cardio-respiratory function;

b. control of haemorrhage;

c. alleviation of shock through vascular volume replacement;

d. relief of pain;

e. control of body temperature;

f. application of more secure dressings and splints; and

g. protection from the elements.

8. **Sustaining Care**. Sustaining care ensures earlier efforts toward stabilization are not compromised. It is provided in transit in the evacuation vehicle and in treatment facilities along the evacuation route. This includes the application of clinical judgement and the skill of a team of physicians and other medical service personnel, supported by a broad range of drugs, equipment and supplies, intravenous fluids and a minimal holding capability characteristic of a Role 2 treatment facility. Necessary examinations and observations can be accomplished in a relatively deliberate manner. Arrangements are made to evacuate patients requiring a more comprehensive scope of care to an appropriate treatment facility.

9. **Initial Surgery**. Initial surgery is that which must be performed urgently and as far forward as the tactical situation permits, with resuscitative and stabilizing surgical intervention in order to save

life and limb, and to control haemorrhage and infection. It demands comprehensive pre-operative diagnostic procedures, intensive preparation for surgery, qualified surgical teams, the administration of general anaesthesia, properly equipped operating rooms, and appropriate post-operative care, and is characteristic of a Role 3 treatment facility.

10. **Definitive Care**. Definitive care is adapted to the precise condition of the patient, embracing patient management, which completes recovery. Specialists perform specific procedures. Definitive care represents the maximum of recovery and preservation of limb and functions. It requires the clinical capability found in a hospital properly staffed and equipped, and located in an environment with a low level of threat from enemy action. This type of care may be provided by a Role 4 military hospital or by an equivalent civilian facility in Canada.

11. **Convalescent Care**. Convalescent care entails guiding the patient from the time of recovery from injury to the time when a state of physical strength and stamina has been achieved commensurate with the job to which the patient will be assigned. This involves clinical judgement in moving the patient to successively more intense conditioning, but which does not challenge beyond the patient's strength.

OPERATIONAL CLINICAL GUIDANCE

12. Due to the demands of operations, fundamental differences exist in patient management in theatre as compared to patient management in civilian practice. This factor notwithstanding, it is the intent that Canadian Forces (CF) personnel deployed into a theatre of operations receive HSS comparable to the standard received by most Canadians. Any differences in the standard of care are reflected in operational clinical direction by the Surgeon General, which forms the basis for developing concepts, standardizing procedures, materiel and equipment, and assessing personnel requirements. A number of documents are employed:

a. **Clinical Treatment Regimes** (CTR), for the management of Battle Casualties at Role 1 and Role 2 treatment facilities. These are based on the

anticipated numbers and types of patients, with medical procedures modified to the dictates of simplicity and economy under wartime conditions in forward areas. Consultants and specialists produce optimum treatment regimes, which are applied to specific patient conditions at each Role of care. Continuous review and revision are required to ensure that the most appropriate clinical practices are reflected.

b. **Operational Clinical Policies**. These policies address the management of patients primarily at Role 3 treatment facilities. These are complementary to the CTRs, but recognize the wider scope of treatment options available at Role 3 and rearward.

c. **CFP 154, Medical Standards for the Canadian Forces**. This manual is issued on the authority of the Chief of the Defence Staff (CDS). It establishes a common method of medical examination and categorization, communicating a concise medical opinion of employment capabilities of personnel.

d. **CFP 175, Canadian Forces Medical Orders (CFMO)**. CFMOs are issued on the authority of the CDS. They provide the guiding principles for the performance of professional and technical duties by medical personnel and constitute authority for action taken.

e. **Surgeon General Medical Directives**. These are issued on the authority of the Surgeon General for the CDS, providing medical, professional, and technical guidance. Surgeon General Medical Directives are often employed for medical issues which need to be dealt with quickly, and for those which are transient or rapidly-changing in nature.

13. Canada also subscribes to standardization of military patient management through international fora such as the North Atlantic

Treaty Organization (NATO), by ratifying and implementing formal agreements. Examples of STANAGs providing clinical guidance are:

a. Emergency War Surgery NATO Handbook (STANAG 2068); and

b. AMed P-11, NATO Handbook of Maritime Medicine (STANAG 1269).

SECTION 2
PROBLEMS PRESENTED BY THE SICK OR INJURED
WOUNDS

14. Wounding is the initial event in a dynamic process, which, if not interrupted by treatment, follows a definite, predictable and inexorable course.

15. A wound consists of damage or destruction to:

a. the skin, allowing infection to enter the body; and

b. the deep tissues (muscle, nerve, vessel, bone, organ), causing temporary or permanent loss of function.

16. The reaction to wounding involves all systems of the body. The most important are:

a. the circulatory system—with loss of blood resulting in the development of shock; and

b. the respiratory system—with impairment of breathing and resulting degrees of asphyxia.

17. The wounded face two major sequelae of their wounds: shock and infection. The shock-producing effect of blood loss from injury is worsened by other fluid depletion, such as from significant burns, vomiting, diarrhea, perspiration, or limited fluid intake. For those with very severe shock, the Advanced Trauma Life Support (ATLS) principle of the "golden hour" applies: these casualties must reach surgical care within one hour to have a reasonable chance to survive. Realistically, this is unlikely to be consistently achievable in operation. Severe shock is the principle cause of mortality in the early

hours after wounding and if it persists longer than six hours it leads to irreversible changes in the body.

18. At the time of injury, affected tissues are extensively contaminated and this leads inevitably to infection, which remains localized for about eight hours after wounding. Beyond this time, it becomes deep and spreading, though antibiotics may keep infection localized for a longer period. This, along with unresolved shock (which is itself deepened by infection), would produce a second peak of mortality at six to eight hours if surgical care had not been reached by this point. Thus, the "six-hour rule" is used to site surgical facilities and to determine evacuation requirements.

19. The processes constituting shock and infection are brought under control by surgery and antibiotic therapy. With certain exceptions, wounds are treated by delayed primary closure. In this technique the wound, including the skin, is left open after debridement, and closed some four to six days later (delayed primary closure). Closure after ten days (secondary closure) is not desirable because it requires more difficult and extensive surgical procedures and the results are inferior.

20. After initial surgery, there is an obligatory period of immobilization, the length of which is dictated by the patient's condition, and the method and length of travel. This period may be up to 14 days after chest or abdominal surgery, although many patients may be fit to be moved in the period between initial surgery and delayed primary closure.

ILLNESS

21. Since personnel deployed on operations are usually young and fit, the incidence of disease might be expected to be comparatively low. During operations, however, the conditions under which service personnel live are particularly favourable to the spread of communicable disease.

22. While the ratio of deaths from disease to deaths from battle injuries has decreased in the modern era, the amount of non-effectiveness due to disease has remained a highly significant factor. This is aggravated because communicable diseases often occur as

epidemics. The onset of a communicable disease is often rapid, and the disability profound. The patient cannot perform self-aid and untrained personnel can give little help. The requirement for evacuation and treatment is no less than for the wounded person, and the need for medical care may well be greater.

23. Although increased understanding of the principles of disease prevention as well as more effective immunization programs have decreased the incidence of disease, and modern therapy has decreased the ravages therefrom, the eradication of disease among personnel on operations is far from being realized.

24. The CF may be required to operate in any area of the world at any time of year on short notice. A period of decreased efficiency may occur on crossing five or more time zones. High mountains and rocky terrain make sanitary waste disposal and personal hygiene more difficult; altitude-associated problems may also occur. Disease-carrying animals, poisonous flora and fauna, polluted water, parasitic infestations, and heat stress affect tropical deployments. Cold climates may precipitate frostbite, hypothermia, trench foot and snow blindness in ill-prepared personnel. A period of acclimatization to extremes of both heat and cold is necessary for maximum avoidance of heat and cold injuries. The symptoms and severity of illness may also be affected by adverse climatic conditions.

STRESS REACTION

25. Stress Reaction is a term encompassing an array of reversible effects caused by the stresses of operations, and refers to the temporary psychological upset that causes an inability to function normally (including the ability to engage the enemy and survive).

26. Combat Stress Reaction (CSR) encompasses the terms Battle Fatigue, Battle Shock, and Critical Incident Stress, as well as older terms such as Shell Shock and Combat Exhaustion. The incidence of CSR is related to many factors including the length, type and intensity of battle.

27. **Prevention**. Even the strongest of individuals are susceptible to stress reaction, but positive preventive measures can be taken to minimize the number of casualties. Every effort should be made to

develop unit and sub-unit cohesion, with emphasis being placed on group identification, a sense of individual confidence and permanency, morale, faith in leadership, and a common trust between members of the unit. Patriotism and love of country should be fostered and individuals must understand and identify with national aims and objectives. Commanders must develop in their personnel a belief in the cause for which they may be required to fight, and individuals must also be prepared to trust their immediate friends and leaders. A high degree of physical fitness must be developed as a means of combatting fatigue and, if necessary, to find the personal limits of endurance. Personnel must be made aware of the effects of stress, and therefore encouraged in the belief that experiencing stress trains individuals to recognize their faults, and to be able to overcome stress effects without becoming a casualty. Preventive measures address the more insidious aspects of fear—that of the unknown—by familiarizing personnel with the real capacity of the enemy in terms of anticipated tactics, technology and weapons effects. Prevention also calls for a strong social support system (e.g. security of family). Finally, the importance of hard realistic training with an intensity and duration of the expected operations cannot be overemphasized.

28. CSR is a normal reaction to a very abnormal situation and does not constitute a psychiatric illness although, if incorrectly managed, it may become one. CSR may present as depression, agitation or psychosis. Stress reaction casualties are divided into two basic groups. The first includes those personnel whose management can be effected by supervisors within the formation and who should never have to enter the medical system. However, a casualty who has exceeded an arbitrary time limit for treatment and continues to have significant symptomology is considered to be a psychiatric patient and is managed through medical resources.

29. Personnel with acute stress reactions requiring management may exhibit symptoms after a relatively short, intense exposure to combat (i.e. within 48 hours). Chronic stress reaction (combat fatigue) occurs in personnel who have been exposed to battle for protracted periods (i.e. several days or weeks). In both instances, the principles of treatment are the same:

a. immediacy—treat as soon as possible;

b. proximity—treat as far forward as possible;

c. expectancy—supervisors and stress management teams must possess and pass on the attitude that the casualty is not suffering any illness and is expected to return to duty as soon as feasible;

d. simplicity—non-medical unit personnel are given training to provide basic treatment; and

e. centrality—refers to the necessity for a mental health team, possibly including medical officers, psychiatric nurses, medical assistants, and/or clinical psychologist members, to sort patients to ensure that only those requiring it are evacuated behind the formation rear boundary and that most can be returned to their unit.

30. **Treatment**. Treatment of minor stress reaction casualties (ready responders) takes place as far forward as the operational situation and the individual's prognosis permits. Treatment of ready responders consists of allowing sleep, giving food, a shower, clean clothes, and a chance to ventilate with an active and empathetic listener. All treatment should be motivated by a positive attitude of the expectation of the rapid return to duty. This normally takes place to the rear of unit lines so as not to inhibit unit mobility, but within the parent formation. Under normal circumstances, the most forward medical element to receive more severe (refactory) stress reaction patients who do not respond to simple treatment and for whom the prognosis is more guarded, is the Role 2 facility. These patients are managed by psychiatric nurses and psychiatrically-trained medical assistants. Advice can be obtained from psychiatrists at Role 3 facilities if needed. Treatment remains simple, and drugs are used only when vital.

31. **Evacuation**. Stress reaction casualties are evacuated and managed by non-medical means no further to the rear than required so as not to interfere with operations, and so they do not enter the replacement system. Casualties who have not responded to up to 72 hours rest at Role 2 are then evacuated to the Role 3 treatment facility for psychiatric assessment and a further 72 hours of care. If they are assessed as having other psychopathology or fail this level of treatment, they are evacuated to a Role 4 facility in Canada. Stress reaction patients are normally assigned Priority Three (Routine) for evacuation by medical means. Within the Forward Combat Zone,

surface evacuation is the recommended method, as helicopter evacuation may symbolize a more serious condition and a more prolonged escape from the battle.

MASS CASUALTIES

32. Mass casualties may result from any type of operation. The term "mass casualty" applies when the number of casualties produced in a relatively short period of time overwhelms the available medical and logistic support capabilities. A mass casualty situation is one in which an excessive disparity exists between the casualty load and the medical capabilities locally available for its conventional management. This disparity may involve personnel, facilities, equipment, supplies, communications and evacuation means, which affect timely treatment. With a large number of casualties, the disparity may be multiplied many times, greatly disrupting the doctrinal approach to treatment and evacuation. However, a mass casualty situation also exists when one person is confronted with two critically injured casualties at the same time. When mass casualties occur, patients already in the treatment facility may also have to be managed according to mass casualty procedures until the overall situation is resolved.

33. When casualties are produced in numbers exceeding rated capabilities of medical resources, medical units must be prepared to alter the standards and scope of medical treatment normally provided. These alterations are with the objective of providing the greatest good for the greatest number. The responsibility for authorizing use of mass casualty procedures is that of the senior medical commander immediately available. The commander must be constantly aware that the situation is finite and he/she must be prepared to return to conventional methods as soon as possible.

TRIAGE

34. Triage is the evaluation and classification of casualties for treatment and evacuation. All patients require individual consideration, and while treatment and evacuation needs may be different, they are usually considered concurrently, leading to the assignment of a priority. Triage consists of the immediate sorting of patients according to type and seriousness of injury, and their

likelihood of survival. These decisions concern the need for resuscitation, the need for emergency surgery, and the futility of surgery when the intrinsic lethality of certain wounds is clearly overwhelming. The objective is to return the greatest number of personnel to combat as quickly as possible and to preserve life and limb in those who cannot be returned.

35. **Routine Triage**. Patients are examined at each medical facility to determine who can receive the required treatment without evacuation, and are sorted into priorities based on their needs, particularly for resuscitation and/or surgery. The following classification is used, Priority One being the most urgent:

a. **PRIORITY ONE (P1)**. The patient's life is immediately threatened. Rapid evacuation, preferably by air, and expeditious treatment is necessary to save the life. Conditions include those requiring resuscitation and early surgery, such as:

(1) respiratory emergencies such as asphyxia due to respiratory obstruction, maxillo-facial wounds with established or imminent asphyxia, sucking wounds of the chest, tension pneumothorax; and

(2) shock due to major haemorrhage, injuries to solid viscera, cardio-pericardial injuries or wounds with massive muscle damage, multiple wounds and major fractures, and severe burns over 20 per cent Body Surface Area (BSA).

b. **PRIORITY TWO (P2)**. Life or limb are in serious jeopardy although not immediately threatened. Patients with injuries requiring early surgery and possible resuscitation, include:

(1) visceral injuries including perforations of the gastrointestinal tract;

(2) wounds of the genito-urinary tract and thoracic injuries without asphyxia;

(3) major vessel injuries requiring repair;

(4) brain and spinal injuries, open or closed, requiring decompression; and

(5) burns under 20 per cent BSA of certain locations, i.e. face, hands, feet, genitalia and perineum.

c. **PRIORITY THREE (P3)**. This encompasses remaining conditions, including brain and spinal injuries, soft tissue injuries requiring wound debridement, lesser fractures and dislocations, eye injuries, maxillo-facial injuries without asphyxia, burns of other locations under 20 per cent BSA, stress reaction and minor injuries.

36. **Mass Casualty Triage**. Sorting of mass casualties involves evaluating and categorizing patients for treatment and evacuation to facilitate the optimum use of limited resources. This is no different from routine triage except for the prompt application of clinical judgement by the best qualified medical personnel to ensure that treatment is directed first toward patients who have the best chance to survive. Simple lifesaving procedures that can be rapidly performed should be given the highest priority. Life takes precedence over limb, and functional repair over cosmetic concern. The following classification is used, T1 being the most urgent:

a. **IMMEDIATE (T1)**. The patient has a high chance of survival, but requires urgent resuscitation and life-saving surgery that can be accomplished with procedures that are not time-consuming. Approximately 20 per cent of mass casualties are in this category. Conditions include asphyxia, respiratory obstruction from mechanical causes, sucking chest wounds, and accessible haemorrhage.

b. **DELAYED (T2)**. The patient can tolerate delay prior to operative intervention without unduly compromising the likelihood of a successful outcome. To mitigate the often-critical effects of delay in surgery, sustaining treatment is required

such as stabilizing intravenous fluids, antibiotics, catheterization, gastric decompression and relief of pain. Approximately 20 per cent of mass casualties are in this category. Conditions include injuries with perceptibly increasing shock, large muscle wounds, fractures of major bones, intra-abdominal, thoracic, head or spinal injuries, uncomplicated major burns, and closed cerebral injuries with increasing loss of consciousness.

c. **MINIMAL (T3)**. Neither life nor limb are in serious jeopardy, though a limb or organ may have sustained crippling injury. The status of the patient is, for the moment at least, relatively stable and evacuation can take place as transport becomes available. Approximately 40 per cent of mass casualties are in this category. Conditions include soft tissue wounds with less than major muscle damage which does not threaten renal function, lesser fractures and dislocations, abrasions, stress reaction patients, and those with minor injuries who can care for themselves or who can be helped by untrained personnel.

d. **EXPECTANT (T4)**. Casualties in this category have wounds or illness so extensive that even if they were the sole casualty and had the benefit of optimal resource application, their survival still would be very unlikely. During a mass casualty situation, this type of patient would require an unjustifiable demand on limited resources that would prejudice the treatment of patients with a better prognosis. Until the mass casualty situation is resolved, these patients receive appropriate supportive treatment from a minimal but competent staff, including the possible use of large doses of narcotic analgesics. Approximately 20 per cent of mass casualties are in this category. Conditions include severe multiple injuries, severe head or spinal injuries, large doses of radiation, and widespread severe burns.

CHAPTER 3
HEALTH SERVICE SUPPORT SYSTEM IN OPERATIONS

SECTION 1
INTRODUCTION

GENERAL

1. This chapter provides an overview for the provision of Health Service Support (HSS) to a Coalition Corps in operations.

THE CORPS

2. A corps is the principal combat formation of the army. It has both tactical and administrative responsibilities. Its organization is dictated by its tasks and may vary from one situation to another. In all situations it includes the essential command, control and supporting forces to enable the corps commander to engage in operations with his/her assigned combat formations.

3. The corps normally consists of two to five divisions, an independent brigade group and the essential supporting arms and services to sustain it. Canada has adopted the US Corps level HSS doctrine, detailed in US FM 4-02.10 *Theater Hospitalization*.

HEALTH SERVICE SUPPORT IN THE CORPS

4. While HSS units are included in the corps order of battle, their actual number and type vary, with HSS being tailored to the mission, composition of the force, and the operational theatre. All operational level HSS units are grouped under the command of a Corps Medical Command (COMEDCOM). The COMEDCOM is functionally organized and structured to provide operational level HSS to the corps as a whole and general HSS to corps troops. In addition to a medical command headquarters and support element, the COMEDCOM normally includes one or more medical groups, one of which may be a Canadian Medical Group (CMG). Units in support of a COMEDCOM may include air ambulance squadrons, and medical

laundry, bath and decontamination companies. In the Electronic Battle Box (EBB) the COMEDCOM is represented as 80 Medical Brigade.

THE DIVISION

5. Divisions are the major combat formations in a corps. A division has both tactical and administrative elements. Its organization, unlike the corps to which it is subordinate, is fixed. It combines the command structure, manoeuvre arms, support arms and Combat Service Support (CSS) elements required to engage in operations.

6. A division consists of three to four brigades in size and the essential supporting arms and services to sustain it. An outline organization of a Canadian mechanized infantry division is found in the EBB.

7. **Employment**. A division is designed to be employed in war, but may also be employed in a variety of tasks short of war including peacekeeping, truce enforcement or other related activities.

8. The major combat formations within a division are the three brigades. Normally, division arms and services elements are grouped with brigades for assigned tasks.

HEALTH SERVICE SUPPORT IN A DIVISION

9. **The Division Medical Battalion**. A division medical battalion normally places a forward medical company in support of each brigade while the medical support company provides medical care for division troops. Depending on the grouping of arms elements, additional medical support assets may be assigned from corps resources. Chapter 5 provides further details on HSS at divisional level and above.

THE BRIGADE GROUP

10. The number and type of forces assigned to an area of operations is dependent on the assigned mission and the nature of operations. In addition to divisions, a corps mechanized brigade group is normally allocated to a corps. This is an independent corps formation with a fixed organization including organic manoeuvre, support and CSS units.

MEDICAL SUPPORT IN A BRIGADE GROUP

11. The integral field ambulance unit provides close support, including the treatment and evacuation of casualties to a brigade group. Chapter 4 outlines how this support is conducted.

SECTION 2
HEALTH SERVICE SUPPORT STRUCTURE

GENERAL

12. The mission of the HSS system dictates that patients be examined, treated, and returned to duty as far forward as practicable and that HSS resources be employed to provide the utmost benefit to the maximum number of personnel in support of the mission. When a wide disparity develops between the patient workload and the treatment capability, it may be necessary to concentrate that capability upon those patients who can be returned to duty quickly; and those for whom resuscitation can be accomplished with a minimum expenditure of personnel, supplies, and time.

13. The HSS system is a single, integrated system that reaches from the forward areas of the combat zone to Canada. This system entails the effective evacuation of sick and wounded personnel, in the shortest possible time, to the medical or dental facilities capable of providing the required treatment. The sick and wounded are regulated and evacuated without regard to lateral or rear boundaries.

LEVELS OF HEALTH SERVICE SUPPORT

14. **General**. HSS within an area of operations is organized into levels that extend rearward throughout the area of operations. The capability of each level is designed to meet the characteristics of the operational environment and to play a specific part in the progressive treatment, hospitalization, and evacuation of sick and wounded personnel. These capabilities are referred to as "levels of health service support " and are described in this section.

15. The level of HSS, including the means of evacuation, generally become more sophisticated from front to rear.

16. The organization for all aspects of HSS is designed to be flexible. The levels in the HSS system are described as follows:

a. **Integral Support**. HSS establishments organic to units, e.g., Unit Medical Station (UMS).

b. **Close Support**. HSS units, usually allocated to specific units within the formation.

c. **General Support**. HSS units that provide support to the force as a whole and not to any particular portion thereof. It should be noted that both Field Ambulances and Divisional Medical Battalions provide both close and general HSS to their formation.

d. **Operational Level Support**. This level of support is usually provided in theatre from national resources. It may be provided from a National Support Element or Canadian Medical Group depending on the size and complexity of the operation. HSS requirements exceeding Canadian capabilities in theatre would be managed through COMEDCOM assets.

e. **Strategic Level Support**. Strategic Level HSS is normally provided in Canada from both military and civilian facilities. It includes the full range of diagnostic and treatment procedures available within

the civilian health care system. In a theatre of operations, strategic level HSS is provided at echelons above corps (EAC) from allied, host or lead nation sources.

ROLES OF THE HEALTH SERVICE SUPPORT SYSTEM

17. The capabilities of the HSS system are classified into the following four roles:

a. **Role 1**. This capability includes the locating and removing of casualties from the place of wounding/injury, providing first aid and emergency medical care, trauma life support and conducting routine medical examinations.

b. **Role 2**. This capability is generally associated with the provision of evacuation from integral medical facilities, en route sustaining care, and the holding/treatment of patients requiring minimal care. Emergency life saving resuscitative procedures can be performed.

c. **Role 3**. This capability is staffed and equipped to provide resuscitation, initial wound surgery, and post-operative/short term in-patient care. Routine x-ray, laboratory, limited scope internal medicine, and psychiatric services are available. Medical resupply to, and patient evacuation from, forward/supported units is provided.

d. **Role 4**. This capability includes, in addition to medical resupply and evacuation:

(1) in-theatre—provision of definitive care hospitalization and rehabilitation care for patients who can be returned to duty within the theatre evacuation policy; and

(2) in-Canada—provision of definitive care hospitalization, including reconstructive surgery, and rehabilitation care.

HOST NATION SUPPORT

18. Obtaining and providing medical and dental support in an area of operations may require mutual support and assistance between the Canadian Forces, allied or host nation forces, and civilian authorities. Agreement may be indicated as part of advance planning in documents such as Memoranda of Understanding (MOU), STANAGs or QSTAGs.

AREA MEDICAL SUPPORT

19. Units/Sub-units with no organic health support receive health care on an area basis, from facilities within the immediate vicinity. This includes the following services:

a. outpatient services,

b. patient evacuation,

c. hospitalization,

d. preventive medicine,

e. medical supply, and

f. dental services.

20. Area support involves the economical provision of all aspects of health support within a specified geographical area. The various HSS units needed are allocated on the basis of troop strength supported, and are established in locations appropriate to troop concentrations. It also ensures that health support is available throughout the area of operations in a way that casualty flow is oriented along the axis of evacuation.

CHAPTER 4
HEALTH SERVICE SUPPORT SYSTEM IN THE BRIGADE GROUP

SECTION 1
INTRODUCTION

1. The number and type of forces assigned to an area of operations is dependent on the assigned mission and the nature of operations. In addition to divisions, a Canadian Mechanized Brigade Group (CMBG) may be allocated to a Coalition Corps. This is an independent corps formation with a fixed organization including integral manoeuvre, support and Combat Service Support (CSS) units.

2. The Health Service Support (HSS) system in support of the brigade group includes integral HSS elements which provide Role 1, 2 and with augmentation, limited Role 3 care.

SECTION 2
INTEGRAL HEALTH SERVICE SUPPORT OF THE BRIGADE GROUP—THE UNIT MEDICAL ELEMENT

GENERAL

3. Integral medical support to units is provided by organic medical elements. Removal of the sick and wounded from forward locations is followed rapidly by emergency medical treatment and evacuation if necessary.

4. The medical personnel of the Unit Medical Station (UMS) carry out routine sick parade and preventive medicine.

5. During quiet periods, medical personnel conduct trades training and upgrading, and provide advice and assistance for first aid training, hygiene and sanitation, and paramedical subjects such as evacuation of the sick and wounded.

ROLE

6. The role of the unit medical element is to provide Role 1 medical support.

ALLOCATION

7. Medical elements are allocated on the basis of one per battalion size unit.

ORGANIZATION

8. The organization of the unit medical element varies with the role and structure of the parent unit. The medical elements of larger combat arms units are organized with a small headquarters (HQ), a UMS section, and company level combat medical teams.

9. **Major Units**. A medical officer (MO) commands the medical platoon, which varies in size but may include up to 21 medical personnel. There are also unit personnel, such as litter bearers, driver/radio operators and water/sanitary duty personnel, who are not members of the Canadian Forces Medical Service (CFMS) but who are under the command of the unit medical officer. The organization of a typical major unit medical platoon is depicted in the Electronic Battle Box (EBB).

10. **Minor Units**. Minor units may not have a medical officer, but have that expertise provided by the supporting Close Support (CS) HSS unit. The medical section may vary from one to six medical assistants.

11. **Vehicle and Equipment**. Each major unit normally has a minimum of one ambulance for each company size sub-unit, and a cargo vehicle and trailer for the medical element HQ and UMS. Minor units have a minimum of one ambulance. Unit medical elements are provided with scales of entitlement for general stores and medical materiel that are adequate for the tasks they perform. The nature of the vehicles and equipment varies with factors such as climate, terrain and the role of the unit.

TASKS

12. The medical element is responsible to:

a. establish a UMS and casualty collecting posts (CCPs);

b. provide emergency medical and dental care for casualties and routine sick parade care for the sick;

c. establish an ambulance shuttle system to evacuate patients from companies to the UMS;

d. perform physical examinations, immunization and medical administration; and

e. provide advice on preventive medicine, first aid and other related subjects.

13. **Medical Platoon Headquarters**. The medical platoon HQ is always co-located with the UMS. Platoon HQ personnel normally perform medical duties within the UMS.

14. The platoon should have line access with sub-unit elements. Contact with the supporting field ambulance is normally via their ambulance shuttle.

15. **Unit Medical Station (UMS)**. The first medical facility in the medical evacuation system is the UMS. It is normally established as far forward as practicable. To ensure effective communications, the UMS is located as close as possible to the battle group HQ.

16. Tasks of the UMS are to:

a. receive, examine and sort patients into priorities for treatment and evacuation;

b. check first aid that has already been given, provide emergency medical treatment necessary to preserve life or limb, relieve pain, and prepare for evacuation those who require treatment beyond the scope of the UMS;

c. treat and return to duty patients with minor illness or injury as soon as possible;

d. provide shelter, protection and sustaining care to patients, particularly while awaiting evacuation;

e. when possible, monitor and carry out essential decontamination of Nuclear Biological Chemical (NBC) contaminated patients prior to commencing treatment;

f. continue or initiate field medical documentation;

g. provide information on all patients evacuated rearward of the UMS and other information required by the unit medical platoon HQ;

h. maintain unit immunization standards;

i. conduct preventive medicine activities including water potability testing;

j. carry out routine medical inspections and examinations of unit personnel;

k. conduct individual and sub-unit training, and advise and assist with paramedical training of unit personnel; and

l. maintain unit medical materiel and UMS general stores.

17. **Combat Medical Team**. At company level, a combat medical team establishes a CCP near the company or combat team HQ. In combat, the medical assistants remain with their sub-units except when accompanying seriously wounded or ill patients to the UMS. When their unit is not actively engaged, they may be withdrawn temporarily to perform duties in the UMS.

18. At the CCP, the tasks of the medical assistants are to:

a. co-ordinate and direct the rescue and collection of patients in the company area;

b. sort patients into priorities for evacuation;

c. supervise and check the first aid already administered;

d. carry out such emergency medical care as their trade skills, the time available, and the tactical situation permits;

e. prepare patients for evacuation;

f. direct the walking wounded to the UMS and, as applicable, arrange for the evacuation to that facility of the litter patients;

g. keep the company commander and the unit MO advised regarding the location, numbers, and types of patients, and the local medical situation; and

h. if time permits, initiate the field medical card (this could be important if the aeromedical evacuation (AIREVAC) is to take place from the company level).

INFANTRY UNITS

19. **General**. Infantry battalions require rapid clearing of casualties in order to maintain fighting effectiveness. This necessitates a highly flexible evacuation system and competent sorting at the UMS.

20. **Organization**. The medical platoon of a mechanized infantry battalion is shown the EBB.

21. **Concept of Operations**. When soldiers become sick or wounded they are treated initially by self-aid or buddy-aid. Thus, it is essential that all members of the unit be proficient in combat first aid procedures.

22. Litter bearers, who are unit personnel, locate and remove casualties to a safe place. They check or initiate first aid and transport the casualties or direct the walking wounded to the CCP. Soldiers at all levels within a unit may be designated as litter bearers. Litter bearers are normally assigned to forward platoons on a basis of two per rifle platoon, with four additional litter bearers employed at the UMS.

23. Casualties may reach the CCP by a number of means, including:

a. under their own power if they are capable of walking unaided;

b. guided by members of their section;

c. transported in a vehicle; or

d. carried or aided by litter bearers.

24. Following treatment at the CCP, patients requiring further evacuation are transported by unit armoured ambulance to the UMS.

ARMOURED UNITS

25. **General**. A mass casualty situation is less likely in an armoured unit than in an infantry unit. However, when casualties do occur, a higher ratio will be more seriously wounded and include a higher proportion of burns. Extraction of casualties both from vehicles and from the battlefield is often difficult and may require special equipment. Evacuation, particularly with armoured reconnaissance units, is normally of greater distance than for infantry units.

26. **Organization**. The medical element of an armoured regiment is similar to the infantry battalion. However, the UMS is smaller than that of the infantry battalion, as the volume of casualties is seldom as high.

27. **Concept of Operations**. Medical support to the various types of armoured elements is similar and variation is mainly an

adjustment to the mission, terrain and distance over which support must be provided. Squadrons are often employed away from their unit, and they must possess a medical element compatible with the task. Battle groups and combat teams casualties are dealt with by established UMS(s).

28. **Armoured Regiments**. Due to the protection afforded by armoured vehicles, a proportion of those casualties who escape disabled vehicles will make their own way out of immediate danger and initiate self-aid or buddy-aid. However, distances are likely to be too great for patients to walk or be carried to the CCP. Casualties are therefore evacuated by unit personnel in squadron tracked ambulances and other unit vehicles, to the squadron CCP. The HSS system rearward of the squadron is similar to that of infantry units.

29. **Armoured Reconnaissance Units**. Units, such as the armoured reconnaissance squadron, are often employed at the troop level, and the medical element must be capable of providing intimate medical support. However, because it is imperative to keep the number of vehicles to a minimum, it is not practical to allocate a combat medical team to each troop. For this reason, all armoured personnel must be proficient in combat first aid, and the troop must be capable of initiating first aid and evacuation procedures for its personnel. The troop leader must decide if the casualties can remain with the troop for the remainder of the mission without jeopardy. If they can remain with the troop they may be inserted into the evacuation system at the first opportunity or be taken to the parent unit's UMS on completion of the troop's mission.

30. If the troop leader decides that casualties should not remain with the troop, a number of courses of action are open, for example:

a. they may be left in a casualty nest to be picked up by the unit's echelons or follow-up elements; the casualties must, however, be capable of surviving the wait, and personnel may have to be detailed to remain with them;

b. evacuation transport may be requested to be sent forward to pick up casualties when the tactical situation permits (helicopters are the preferred transportation mode); or

c. casualties may be evacuated to a squadron CCP where they are sorted and then evacuated, preferably by helicopter.

ARTILLERY UNITS

31. **Organization**. The medical element of an artillery regiment is similar to that of the infantry battalion.

32. **Concept of Medical Support**. Artillery units are usually deployed with considerable distances between their batteries. Battery medical personnel provide support to them, hence their operation is relatively independent from the UMS. Due to the smaller number of personnel supported and the smaller footprint of a battery, regimental litter bearers are not normally required. Casualties are evacuated from their battery location directly to the nearest HSS facility.

COMBAT ENGINEER REGIMENT

33. **Organization**. A typical medical element of a field engineer regiment is shown in the EBB.

34. **Concept of Medical Support**. Combat medical teams are assigned to support squadrons, when practicable, to provide medical support. When engineer troops are assigned to other units, medical support may be assigned from the UMS. When engineers are employed as infantry, the UMS will be augmented from field ambulance resources

TACTICAL AVIATION UNITS

35. A UMS is integral to tactical aviation squadrons in order to conduct routine sick parade and other first level medical care. Squadrons also receive formation assigned flight surgeon support for aircrew medical examinations and investigations, and the medical aspects of flight safety.

COMBAT SERVICE SUPPORT UNITS

36. CSS units incur casualties as the result of action by long range artillery, missiles, bombing, airborne/airmobile insertions, or when active in defence of local areas. Accidents related to storing and shipping of material, working with heavy machinery and extended transportation operations also cause a significant number of casualties. They are, therefore, allocated a medical organization.

SECTION 3
CLOSE SUPPORT HEALTH SERVICE SUPPORT IN THE BRIGADE GROUP—THE FIELD AMBULANCE

GENERAL

37. The organic field ambulance provides close support HSS to a brigade group.

ROLE

38. The role of a brigade group field ambulance is to provide Role 2 and, with augmentation, limited Role 3 HSS to the brigade group.

ALLOCATION

39. Field ambulances are allocated on the basis of one per brigade group.

ORGANIZATION

40. The field ambulance is composed of a unit HQ, a medical company, an ambulance company, a dental platoon, and an administration platoon. The organization of a field ambulance can be found in the EBB.

TASKS

41. Field ambulance tasks are to:

a. provide command and control elements to ensure the best employment of HSS resources in the brigade group;

b. provide Role 1 medical support as required for units without organic first line medical elements;

c. evacuate patients from UMSs;

d. evacuate patients to the Brigade Medical Station, unless otherwise specifically provided for;

e. establish facilities for sorting and staging, and to provide for the limited care of patients up to and including forward surgical care;

f. hold the sick and wounded within the brigade group's evacuation policy and during periods of interrupted evacuation;

g. augment, reinforce or replace UMSs;

h. replenish medical supplies and equipment;

i. assist in the maintenance of health and prevention of disease; and

j. provide dental services to the brigade group.

CHARACTERISTICS

42. The field ambulance has the following characteristics:

a. with appropriate tailoring of equipment, establishment and training, the field ambulance is capable of providing Role 1, Role 2 and limited

Role 3 health support in all types of operations and in any area of the world;

b. it is completely mobile and is self-contained for administration—medical platoons can operate independently for short periods of time;

c. the flexibility of the unit is assured by maintaining a reserve and adequate communications;

d. field ambulances have no integral surgical capability, however, field surgical teams (FSTs) or an advanced surgical centre (ASC) may be attached temporarily; and

e. the unit has no integral air ambulances; these resources must be provided from supporting aviation assets.

FIELD AMBULANCE HEADQUARTERS

43. **General**. A field ambulance HQ consists of:

a. a command section composed of the commanding officer, deputy commanding officer, regimental sergeant-major and their drivers;

b. an operations section;

c. a signals section; and

d. an administrative section.

44. **Command Section**. The command section is responsible for:

a. command, control and administration of the unit;

b. preparation of the formation medical support plan; and

c. control of attached elements.

45. **Operations Section**. The operations section forms the unit command post under the direction of the operations officer.

46. **Signals Section**. The signals section provides all communications support within the field ambulance. This includes the establishment of unit and sub-unit voice nets, out-stations on the brigade group command, and administration nets. The signals section has a limited maintenance and repair capability. It is normally located with the field ambulance HQ complex.

47. **Administrative Section**. The administrative section provides unit orderly room services for the field ambulance. It consists of the unit adjutant, chief clerk and administration clerks. Services provided include:

a. notification to units of admission, rearward evacuation or return of patients;

b. personnel administration for unit personnel and patients; and

c. provision of a switchboard for the unit HQ complex.

MEDICAL COMPANY

48. **General**. The medical company deploys between the UMSs and supporting hospitals. Normally it is located in the Brigade Support Area (BSA) where it forms a Brigade Medical Station (BMS) providing a limited care facility. The tactical situation or the distances between the UMSs and the BMS could require one or more medical platoons to deploy forward of the BSA to maintain the appropriate intervals between staging facilities.

49. **Tasks**. The medical company is responsible for the following:

a. the provision of medical holding and staging facilities;

b. the provision of medical resupply to its sub-units and UMSs;

c. a Patient Decontamination Centre (PDC) to decontaminate patients prior to medical treatment;

d. the provision of medical and administrative support to a FST or ASC when attached;

e. preventive medicine;

f. the provision of medical support to units without integral medical support elements deployed in the brigade rear area;

g. treatment of patients passing through or retained in the company facilities;

h. the provision of pharmacy services and medical resupply;

i. the provision of replacement personnel and equipment to supported UMSs; and

j. the provision of gathering and submission of reports and returns.

50. **Company Headquarters**. Company HQ consists of a command element, the unit medical supply section and a preventive medicine section. It usually collocates with the field ambulance HQ in the Brigade Administration Area (BAA). It has no command post.

51. The medical supply section is comprised of the Brigade pharmacist and medical assistants trained in medical supply procedures. The section holds the unit basic load of medical stores not on distribution to sub-units, together with the medical supply maintenance load for the supported formation.

52. The preventive medicine section consists of the senior preventive medicine technician and one or more junior technicians. The preventive medicine section provides preventive medicine services to the field ambulance and to units without integral preventive

medicine personnel. It also exercises, on behalf of the commanding officer, technical supervision of unit preventive medicine technicians within the formation. Preventive medicine technicians normally locate and work from the medical company HQ area.

53. **Medical Platoons**. Each medical platoon is composed of a small command element and two medical sections. As an entity the medical platoon can operate a BMS. One medical section will normally provide emergency medical care while the other holds patients.

54. Each of the two medical sections can be deployed independently to operate staging facilities. When this occurs, medical officers from the platoon HQ are normally detached to sections to provide clinical expertise.

55. The medical section can be further sub-divided to provide two medical detachments. When a medical officer and a senior medical assistant are attached to a detachment, it can augment or replace a UMS. It can also provide on-site medical care to mass casualty situations.

56. **Tasks**. Medical platoons are responsible for:

a. establishing BMSs or staging stations;

b. augmenting or replacing UMSs;

c. providing medical resupply to UMSs;

d. treating patients passing through or retained;

e. maintaining a liaison with supported units; and

f. compiling reports and returns.

AMBULANCE COMPANY

57. **General**. The ambulance company deploys in the forward areas and provides Role 2 ground evacuation of patients.

58. **Tasks**. The Ambulance Company is responsible for:

a. surface evacuation of patients from UMSs to the BMS facility;

b. command and control of all evacuation resources organic to, and assigned to the field ambulance;

c. liaison with supported units;

d. operation of the unit alternate HQ;

e. replacement of ambulance assets; and

f. transportation of medical resupplies and personnel.

59. **Company Headquarters**. The Ambulance Company HQ consists of a command section and a command post. Due to the fact that the Ambulance Company acts as the unit alternate HQ it is equipped with the same communication capability as the field ambulance HQ.

60. **Ambulance Platoons**. Each platoon HQ can provide personnel, vehicles and communications for two Ambulance Control Points (ACPs). The light ambulance platoons consist of two sections, each with six light ambulances. The composite ambulance platoon consists of one section with six medium ambulances and one section with six wheeled, armoured ambulances.

DENTAL PLATOON

61. **General**. The role of the dental platoon is to provide dental support to the brigade group. Dental operations are discussed further in Chapter 10.

62. **Tasks**. The tasks of the dental platoon are to:

a. maintain oral health and prevent dental disease;

b. provide emergency and routine dental treatment within the capabilities of the dental platoon and

arrange the evacuation of those patients who require care beyond the scope of platoon resources;

c. prepare dental patient documents, maintain statistical records and submit such reports and returns as are required by formation standing orders and higher HQ;

d. receive and control the use of such equipment and supplies as are required by the sub-unit and arrange for their delivery to sections; and

e. provide paramedical support.

SERVICES PLATOON

63. **General**. The services platoon provides integral support for all field ambulance elements and attachments, including transport, maintenance, general supply and food services.

64. **Tasks**. The services platoon is responsible for:

a. the provision of transport, maintenance, general supply and food services to all field ambulance sub-units;

b. the co-ordination of all logistic aspects with the CS Service Battalion and brigade group HQ; and

c. the control of sub-units during tactical and administrative moves, and compilation and submission of reports and returns.

CHAPTER 5
DIVISIONAL HEALTH SERVICE SUPPORT AND ABOVE

SECTION 1
INTRODUCTION

GENERAL

1. The Health Service Support (HSS) system within the division extends from the forward operational areas of the manoeuvre battalions or battle groups, to the divisional rear boundary. This chapter concentrates on the integral, close and general HSS support system within the division. Operational level HSS is provided through a National Support Element (NSE) which is detailed in Section 4 of this chapter.

HEALTH SERVICE SUPPORT ORGANIZATION

2. The HSS organization consists of organic medical platoons/sections, which provide integral support to individual units, a medical battalion that provides close and general support to the division, and a NSE, which provides operational support.

SECTION 2
INTEGRAL HEALTH SERVICE SUPPORT IN THE DIVISION

GENERAL

3. As discussed in Chapter 3, integral HSS is provided at the unit level and is the responsibility of the unit Commanding Officer (CO). It consists of the removal of sick and wounded from forward locations, emergency medical treatment and further evacuation if necessary.

ALLOCATION

4. Integral level HSS is organic to divisional level headquarters (HQ) and signals squadrons, major combat arms, combat support arms and combat services support (CSS) units.

5. Units whose medical component does not include a medical officer are supported by a designated company of the medical battalion.

SECTION 3
CLOSE AND GENERAL SUPPORT HEALTH SERVICE SUPPORT IN THE DIVISION—THE MEDICAL BATTALION

GENERAL

6. Close support HSS is provided by the medical platoons of the close support medical companies which are usually allocated to the manoeuvre battalions and battle groups of the brigades within the division. The medical battalion general support medical company provides HSS general support on an area basis to the divisional troops. The divisional medical battalion is grouped along functional lines to ensure the control of scarce HSS resources at the highest level. The emphasis is on trauma life support treatment and rapid evacuation in order that the patient will be in the best possible condition to undergo further treatment at the appropriate facility.

ROLE

7. The role of the medical battalion is to provide close and general HSS to the division.

ALLOCATION

8. Medical battalions are allocated on the basis of one per division.

ORGANIZATION

9. A medical battalion consists of a HQ, three close support medical companies, one general support medical support company, one ambulance company and one administration company. An organization chart depicting a medical battalion is included in the Electronic Battle Box (EBB).

TASKS

10. The tasks of the division medical battalion include:

a. the command and control of resources assigned or attached to the division medical battalion;

b. the execution of the divisional medical plan;

c. the evacuation of patients from integral HSS facilities to Brigade Medical Stations (BMSs) or the Division Medical Station (DMS);

d. the operation of limited care facilities with a short-term holding capability;

e. the provision of a basis for the temporary formation of an advance surgical centre;

f. the provision of Role 1 and 2 HSS as required on an area basis;

g. the augmentation, reinforcement or replacement of integral medical components Unit Medical Station (UMS) as required;

h. the provision of limited administrative support to attached specialist teams;

i. the provision of teams to assist with Combat Stress Reaction (CSR) casualties;

j. the provision of preventive medicine services;

k. the provision of close level support medical supply services; and

l. the provision of medical advice to supported brigades.

CHARACTERISTICS

11. A divisional medical battalion has organic administrative capability. Its medical companies can operate independently for short periods of time when supporting their affiliated brigades. The medical support company or any of the medical companies may support a Field Surgical Team (FST) or Advanced Surgical Centre (ASC). Divisional medical battalions have no organic surgical or air evacuation capability.

COMMAND AND CONTROL

12. The commander of the divisional medical battalion is also the Division Surgeon and as such, is the principle medical advisor to the Division Commander. Division HQ includes a medical staff officer who co-ordinates medical matters.

MEDICAL BATTALION HEADQUARTERS

13. **Role**. The role of the medical battalion HQ is to assist the CO in the discharge of his/her command and planning responsibilities.

14. **Organization**. The medical battalion HQ is mobile and administratively self-sufficient. It includes a HQ section, a communications section and an administration section.

15. **Tasks**. The tasks which evolve from the HQ role are to:

a. advise the CO on all matters affecting medical support to the division by the medical battalion;

b. control and co-ordinate the execution of the divisional medical plan;

c. deploy medical sub-units to meet the operational requirement;

d. plan and co-ordinate medical training with the medical battalion; and

e. provide administrative staff support to the medical battalion.

16. **Location**. The HQ is normally located in the Divisional Support Area (DSA) with the medical support and services companies. A detachment may co-locate with Division rear HQ to facilitate planning and co-ordination.

CLOSE SUPPORT MEDICAL COMPANIES

17. **Role**. The role of close support (CS) medical companies is to provide close support medical support to affiliated brigades.

18. **Organization**. CS medical companies consist of a HQ, three medical platoons and a services section which include a supply, transport and ration detachment. A diagram of the divisional medical company is provided in the EBB.

19. **Tasks**. Medical companies perform tasks similar to those of the field ambulance, discussed in Chapter 2. These include:

a. establishing close support treatment and holding facilities (BMSs) to provide medical care on an area basis;

b. establishing staging facilities when required;

c. providing resuscitative care to reduce mortality and morbidity;

d. providing enroute sustaining care;

e. providing integral support to those elements without organic medical resources;

f. augmenting, reinforcing or replacing UMSs;

g. re-supplying UMSs with medical supplies and equipment;

h. providing auxiliary and administrative support to attached medical teams such as a FST; and

i. providing a Patient Decontamination Centre (PDC) if required.

20. In a division structure, medical companies are organized and equipped to perform the following additional responsibilities:

a. co-ordinating surface evacuation with allocated ambulance resources;

b. carrying out medical planning for its affiliated brigade; and

c. administering themselves for limited periods of time.

GENERAL SUPPORT MEDICAL SUPPORT COMPANY

21. **Role**. The primary role of the General Support (GS) medical support company is to provide general support to divisional troops.

22. **Organization**. The GS medical support company consists of a HQ, three medical platoons, a stress management centre, a medical supply section and a preventive medicine section. A diagram of the divisional GS medical support company is provided in the EBB.

23. **Tasks**. These include:

a. establishing a DMS for divisional troops;

b. holding minor sick and injured evacuated from a BMS when circumstances dictate;

c. providing integral support to elements without organic medical resources;

d. providing auxiliary and administrative support to specialist teams attached to the DMS, such as a FST or ASC;

e. augmenting, reinforcing or replacing medical companies;

f. providing preventive medicine services;

g. re-supplying medical companies and UMSs with medical supplies and equipment;

h. providing a patient decontamination centre at the DMS; and

i. providing specialist personnel to assist with the management of CSR casualties.

AMBULANCE COMPANY

24. **Role**. The role of the ambulance company is to provide surface evacuation for patients from the UMS to a BMS set up by a medical company or to the DMS set up by the medical support company.

25. **Organization**. The ambulance company consists of a HQ and seven light ambulance platoons.

26. **Tasks**. Tasks include the following:

a. transport and provide enroute sustaining care to patients;

b. transport medical supplies, equipment and personnel;

c. maintain liaison with supported units;

d. provide command and control of all surface evacuation within the division; and

e. act as the alternate medical battalion HQ when required.

27. **Ambulance Platoons**. Ambulance platoons are normally allocated on the basis of two per brigade. One of the platoon HQ is tasked to co-ordinate patient evacuation within the brigade area.

ADMINISTRATION COMPANY

28. **Role**. The role of the Administration Company is to provide integral logistic support to the medical battalion.

29. **Organization**. The administration company consists of a HQ, a services platoon and a maintenance platoon.

30. **Tasks**. Tasks include:

a. providing integral supply services;

b. providing food services to patients and medical battalion personnel; and

c. providing integral maintenance and recovery.

SECTION 4
OPERATIONAL HEALTH SERVICE SUPPORT

GENERAL

31. Units of the NSE/CMG provide operational support to the Division or Canadian Mechanized Brigade Group (CMBG). This support includes the evacuation of patients from division/brigade medical stations, the provision of resuscitative and limited medical and surgical treatment, and hospitalization. Support in excess of Canadian HSS capacity will be provided through allied (possibly a Corps Medical Command (COMEDCOM)) or host nation sources. Operational support from non-national sources is detailed in

CFP(J)5(4) –17 *Health Service Support for the Canadian Forces Joint and Combined Operations*.

ROLE

32. The role of the NSE/CMG is to provide operational level HSS support to a Canadian division or CMBG within a Coalition Corps.

ALLOCATION

33. NSE/CMGs are allocated on the basis of one per Canadian division or CMBG.

ORGANIZATION

34. The composition of a NSE/CMG may vary depending on the size and operational tasks of the division or CMBG it is supporting. A typical outline organization is depicted in the EBB.

TASKS

35. The tasks of the NSE/CMG include:

a. evacuation of patients from BMSs and DMSs to an appropriate operational level facility using land and air ambulances;

b. hospitalization including surgical and medical treatment for critically injured or ill patients to prepare them for further evacuation;

c. holding of less seriously injured or ill patients until they can be returned to duty;

d. the provision of environmental and preventive medicine;

e. medical material management including procurement, storage, distribution and disposal of medical supplies and equipment;

f. whole blood storage and distribution;

g. spectacle repair;

h. medical equipment repair and maintenance;

i. medical/clinical specialist support;

j. medical regulation of patients;

k. training for medical and paramedical personnel; and

l. compilation and distribution of medical documents, reports and returns.

CHARACTERISTICS

36. The NSE/CMG is administratively self-supporting, as are many of its sub-units. It has integral surgical, medical and nursing capability. It also has integral land patient evacuation resources. An air ambulance squadron(s) is normally attached.

CMG HEADQUARTERS

37. **Role**. The role of the NSE/CMG HQ is to command, control, and supervise all medical units assigned to the medical group.

38. **Organization**. The group HQ is mobile and administratively self-sufficient. It includes a HQ element, operational and administrative cells and a signals troop.

39. **Tasks**. Tasks which evolve from the HQ role are to:

a advise the National Commander and National Command Element staff on matters affecting the employment and capabilities of the medical group;

b. execute the national medical plan;

c. effect medical regulating functions for the evacuation of patients to medical treatment facilities in the corps area;

d. plan the procurement, storage, maintenance, distribution and documentation of medical equipment and supplies; and

e. plan and co-ordinate medical training in the medical group.

FIELD HOSPITALS

40. **Role**. The role of field hospitals is to provide a primary surgical/medical facility for all categories of patients in the Canadian division.

41. **Allocation**. Field hospitals are allocated on the basis of one per brigade.

42. **Organization**. The field hospital consists of a HQ, a surgical services company, a forward hospital company, a consultant services company, a clinical services company, a patient holding company and a support company.

43. **Tasks**. Tasks which evolve from the field hospital role are:

a. resuscitation and initial surgical care;

b. short term in-patient care of surgical and medical patients;

c. preparation of patients for further evacuation;

d. diagnosis and treatment of serious stress reaction patients from local units or evacuated from the forward area; and

e. provision of first line medical support to local units without their own integral medical establishment.

44. Sub-unit tasks include:

a. **Unit Headquarters**. The HQ provides command and control of the unit as well as the personnel administration and admission and discharge functions.

b. **Surgical Services**. This element has the resources to support a major surgical workload. Functional areas include:

(1) emergency medical treatment/reception,

(2) pre-op,

(3) surgical teams and operating room staff,

(4) post-op, and

(5) central sterile supply.

c. **Forward Hospital Company**. The 50 bed Forward Hospital Company of the Field Hospital provides a fully mobile element needed to support a manoeuvre formation. It consists of basic Surgical Services, Clinical Services, 10 Critical Care, 20 Intermediate Care, and 20 Minimal Care beds with supporting logistics services to enable independent operation up to 72 hours. Possible tasks for the Forward Hospital Company include:

(1) as an entity, provide a forward hospital element when the division is advancing, prior to the redeployment of the entire field hospital;

(2) as an entity, provide third line care for special tasks such as supporting the

independent brigade group or a Prisoner of War (POW) cage; and

(3) detach personnel, vehicles and equipment to provide an ASC in support of a DMS or BMS when the tactical situation requires surgery to be performed in forward areas.

d. **Consultant Services**. This element provides the base for specialist functions, including the major clinical services of General Surgery, Orthopaedic Surgery, Oral Surgery, Internal Medicine, and Psychiatry.

e. **Clinical Services**. These services include Laboratory, Radiology, Pharmacy and the Medical Inspection Room (MIR). The MIR provides the Unit Medical Station function, including Preventive Medicine (Pmed) services, and is the base for Specialty Clinics and the Minor Operating Room.

f. **Patient Holding**. This element provides nursing care and holding capability for in-patients requiring critical, intermediate or minimal levels of care.

g. **Administration Company**. This company provides general administrative and logistics support for the hospital. Sub-unit tasks include food services, supply, transport and first line maintenance. If not provided from external resources, laundry, bath, patient decontamination, water point, and bulk fuel delivery tasks may also be included.

45. **Characteristics**. The field hospital is a mobile, administratively self-sufficient 400 bed unit possessing transport to move all unit personnel and 50 percent of the equipment in a single lift. The unit is mission adaptable and organized on a functional modular basis capable of being deployed to suit the particular requirements of the force supported. Field hospitals may operate alone or may be grouped, with appropriate medical support elements, to form a corps medical centre(s) should the operational situation so

dictate. The hospital is not a full definitive care facility. Some patients may, however, receive full treatment and be returned to duty within the combat zone (CZ) evacuation policy. Apart from the limitations imposed by the evacuation policy in effect, the unit does not possess a full range of diagnostic and treatment services. The scope and capabilities of the hospital can, however, be expanded by the attachment of additional specialist teams, diagnostic elements and holding units. It has no integral ambulances.

MEDICAL SUPPORT COMPANY

46. **Role**. The role of the medical support company is to provide general medical material, ambulance, stress management, decontamination and preventive medicine support to the division.

47. **Allocation**. The medical support company is allocated on the basis of one per division and assigned to the CMG.

48. **Organization**. The company consists of a HQ, a field medical equipment depot, an ambulance platoon, a forward aeromedical evacuation (AIREVAC) cell, a decontamination platoon, a stress management team, a preventive medicine platoon, and a national medical liaison team.

49. **Tasks**. Tasks of the medical support company include the provision of:

a. medical supplies and equipment; medical equipment repair and maintenance, and optical repair and support to medical units and facilities in the CZ;

b. surface evacuation to the operational level facilities;

c. the co-ordination of air evacuation;

d. whole blood management in support of division treatment facilities;

e. decontamination services to patients before they are admitted to the CMG's medical facilities; and

f. advice to the National Commander and Group Surgeon in the study, evaluation and control of environmental and other factors affecting the health and well-being of division personnel.

SECTION 5
STRATEGIC LEVEL HSS SUPPORT

GENERAL

50. Canadian strategic level HSS is normally provided in Canada and not the theatre of operations. This results in battle casualties being evacuated from the theatre of operations in numbers far greater than earlier conflicts. In allied or coalition operations however, strategic HSS services may be provided by allied forces or the host/lead nation, in military or civilian facilities.

ROLE

51. The role of strategic level HSS resources is to provide definitive medical care, convalescence, medical material and evacuation services.

TYPES OF STRATEGIC LEVEL FACILITIES

52. As stated, the number and type of strategic facilities may vary, however, the following services are normally required:

a. **General Hospitals**. These large hospitals are required to provide definitive care including specialized surgery involving reparative and reconstructive procedures.

b. **Convalescent Centres**. The role of a convalescent centre is to provide physical reconditioning of patients prior to returning them to duty. The staff is responsible for the evaluation of patients, and for providing out-patient care, physical examination,

exercise, tolerance test evaluation and recommendations for physical reclassification.

c. **Aeromedical Evacuation Assets**. Strategic airlift is used to move patients from the theatre to Canada or other designated locations.

CHAPTER 6
COMMAND AND CONTROL OF HEALTH SERVICE SUPPORT RESOURCES

SECTION 1
COMMAND STRUCTURE

GENERAL

1. The commander of an area of operations exercises overall control of combined forces within the area, including any combined Health Service Support (HSS) services. The commander of a task force who may be deployed in a peacekeeping situation, has similar authority.

2. The authority for command is delegated from the senior commander down through subordinate formation commanders to the commanding officers of units. Medical units included in the order of battle of a formation are under the command of a functional medical commander. Similarly, the medical element of a unit is under the command of the unit medical officer, who reports to his/her unit commander.

3. The command relationships are described in B-GL-300-000/FP-000 *Canada's Army*, and are equally applicable to the command of HSS resources.

THE FORMATION COMMANDER'S STAFF

4. The principal duty of the staff, at all levels, is to assist the commander in the function of command, although the staff must also work continually to support subordinate commanders, their staffs, and the troops of the formation. The staff only act on the authority of the commander.

5. The Assistant Chief of Staff (ACOS) or G4 (at lower formations) at each formation level is responsible for co-ordinating the activities of the administrative staff and Combat Service Support (CSS) formations/units on the commander's behalf. This individual is

the advisor to the commander on all administrative matters, and is responsible for putting the commander's policies into effect. To assist with medical matters, medical personnel are part of the G4 branch in a division and corps headquarters (HQ). They are responsible for the technical efficiency of the medical services of the formation and are authorized to issue technical instructions concerning functional medical matters.

SECTION 2
MEDICAL COMMAND AND STAFF

MEDICAL COMMANDERS

6. The commander of the medical units within each formation is the senior medical branch officer and, as such, is the principal medical advisor to the formation commander for the employment and capabilities of those units, as well as for advice on other medical matters.

7. The medical commander reports directly to the formation commander, and is responsible for the execution of medical support within the formation.

8. The medical commander co-ordinates mutual support requirements and determines medical support needs within the formation. Medical professional matters are co-ordinated directly with medical commanders of subordinate and flanking formations, and with the medical branch staff officers of formation HQ.

THE FORMATION COMMANDER'S MEDICAL STAFF

9. As stated previously in this chapter, medical staff officers are part of the G4 branch in each formation HQ down to and including a division. They are responsible for the following specific duties:

a. assisting in the development of policy and planning, co-ordinating, and controlling:

(1) patient evacuation and management;

(2) ancillary services such as lab, blood, and optical;

(3) preventive medicine;

(4) provision of medical materiel;

(5) medical activities in support of Civil-military Co-operation (CIMIC) agreements; and

(6) medical support to other armed services;

b. determining requirements for medical resources and making recommendations on their employment; and

c. co-ordinating medical reports, returns, and documentation.

10. The medical staff also, after consultation with the senior medical commander, prepares the medical plan to be issued by the ACOS.

11. The senior medical staff officer is part of the special staff to the formation commander and, therefore has direct access to provide professional and technical advice.

12. There is obvious potential for conflict between the medical staff and the functional medical commander. This must be minimized through co-ordination, tact and understanding of the other's role.

SPECIALIST CONSULTANT STAFF

13. Professional consultants in various services or specialties may be appointed where operational or environmental considerations warrant.

14. These services or specialties may include surgery, radiology, internal medicine, urology, psychiatry, entomology, epidemiology, environmental medicine, nuclear medicine, preventive medicine, nursing, pharmacy, laboratory, dietary and optometry.

15. Consultants make recommendations that aid in establishing patient management policies for the formation, monitor quality of clinical performance and adherence to established policy, recommend clinical investigations to solve critical patient care problems, assist in personnel management decisions governing clinical specialists, and disseminate professional and technical information.

16. Individuals in specialties at lower level medical units or HQ may also act as consultants in their specialties in addition to their primary duties.

BRIGADE GROUP SURGEON

17. The commanding officer of a brigade group field ambulance is also the Brigade Group Surgeon, with no separation of line and staff functions. The Brigade Group Surgeon's combined responsibilities are essentially the same as higher level medical commanders, but with a change of scope and complexity commensurate with the level of the formation.

18. Additional responsibilities of the Brigade Group Surgeon include:

a. ensuring that an adequate standard and level of first-aid training is maintained within the formation;

b. supervising the professional medical aspects of unit medical officers in the formation;

c. providing encouragement to unit commanding officers to ensure that professional medical recommendations made by unit medical officers are supported; and

d. bringing to the attention of unit commanding officers any unsatisfactory medical conditions and the necessary corrective measures.

19. In order to carry out his/her responsibilities, the Brigade Group Surgeon must divide time between several locations. These responsibilities are concentrated in the following areas:

a. **Brigade group HQ**:

(1) to receive the brigade group commander's orders,

(2) to maintain an intimate contact with the staff and the conduct of operations in order to plan and control the provision of medical support in the formation, and

(3) to provide advice to the commander.

b. **Field ambulance**. To act as commanding officer of the unit.

20. In a division structure, the Officer Commanding a supporting medical company is not a member of the staff of the brigade commander and therefore does not carry the title of Brigade Surgeon. The medical company commander, however, does perform medical planning and provides medical advice to the brigade commander on behalf of the Division Surgeon.

UNIT MEDICAL OFFICERS

21. Unit medical officers are in command of the medical element in major units. Their responsibilities include:

a. exercising operational control of the medical element;

b. providing medical treatment within capabilities and resources available;

c. supervising the collection, treatment, sorting and evacuation of patients;

d. preparing the medical plan to support unit operations;

e. advising the unit commanding officer on medical matters, the medical situation, and capabilities of the medical element;

f. conducting training in medical subjects;

g. supervising training in first aid;

h. recommending measures to conserve manpower from losses due to disease and/or injury;

i. conducting annual or other physical examinations to ensure that unit personnel are assigned the correct medical category;

j. ensuring the full immunization of unit personnel;

k. maintaining medical records; and

l. controlling medical supplies and equipment.

22. It is vital that unit medical officers ensure that the supporting second line medical unit is kept informed of the location of the unit medical stations and the local medical situation.

23. Unit medical officers must understand their relationship with their commanding officer and with their Brigade Surgeon. They are fully responsible to their commanding officers for the duties detailed in this section, however, they are also responsible to their brigade surgeons for the professional medical aspects of those same duties.

SECTION 3
STAFF CO-ORDINATION

CO-ORDINATION WITH THE GENERAL STAFF

24. General staff co-ordination with regard to the medical service includes the following:

a. **G1—Personnel**. While the Canadian Forces Medical services (CFMS) are closely involved with

all branches of the general staff, it is with the G1 staff of a HQ that the majority of co-ordination, liaison and assistance is effected. Specific areas of collateral interest to the G1 branch relating to the provision of medical support include:

(1) co-ordination of evacuation and hospitalization of the sick and wounded;

(2) evacuation and hospitalization of prisoners of war;

(3) medical problems associated with straggler control;

(4) casualty reports and returns;

(5) military manpower allocation for medical units;

(6) personnel replacements for medical units;

(7) co-ordination of welfare and amenities to medical facilities;

(8) pay, postal, chaplain and legal services for medical facilities;

(9) employment of prisoners of war and retained personnel to augment the medical service;

(10) administration of the code of service discipline relating to patients and personnel of medical units;

(11) burials and graves registration; and

(12) notification of next of kin.

b. **G2—Intelligence**. The primary task of the G2 branch is the timely determination of the enemy's

locations, activities, capabilities and intentions. Specific areas of collateral interest to the G2 staff relating to the medical service include:

(1) captured medical materiel and food supplies;

(2) medical intelligence estimates and summaries;

(3) medical analysis of incoming information which may be of intelligence value;

(4) interrogation of prisoner of war patients;

(5) medical aspects of meteorological information; and

(6) medical aspects of psychological operations.

c. **G3—Operations**. G3 is the pre-eminent staff branch. The role of G3 is to assist the commander in the planning and execution of operations. Specific areas of the G3 staff relating to the medical services include:

(1) medical aspects of staff estimates of the operational situation;

(2) casualty estimates;

(3) planning, co-ordination and control of movement;

(4) operations orders and instructions;

(5) policy regarding concealment of medical facilities;

(6) medical aspects of Nuclear Biological and Chemical (NBC) measures;

(7) information regarding current and anticipated operations;

(8) friendly force orders of battle, staff tables and information on operational readiness;

(9) control of critical supplies and equipment;

(10) priorities for allocation of personnel;

(11) training of personnel;

(12) trials of equipment and supplies;

(13) communications;

(14) utilization of airspace;

(15) allocation of additional aircraft;

(16) engineer services,provision of guards for Prisoner of War (POW) patients; and

(17) terrain control and movement.

d. **G4—Logistics**. G4 staff deals with the service support needs of formations, units and sub-units. Specific aspects of the G4 staff relating to the medical services include:

(1) movement, storage, distribution, maintenance and disposal of materiel, less medical materiel;

(2) accommodation;

(3) services, including construction, maintenance, operation of utilities, provision of potable water, repair and recovery, transportation, and postal;

(4) medical aspects of the development of estimates and the preparation of administrative orders and instructions;

(5) movement of medical units and facilities;

(6) detailed decontamination services; and

(7) return of former patients to home units or replacement holding units, in conjunction with G1.

e. **G5—Civil-Military Co-operation (CIMIC)**. G5 deals with the development and execution of policies relating to national authorities and to the civilian population. Specific aspects of the G5 staff relating to the medical services include:

(1) medical involvement in CIMIC programmes;

(2) use of civilian medical facilities for military personnel;

(3) treatment, evacuation and hospitalization of civilians within the area of operations; and

(4) provision of civilian labour.

f. **G6—Communication and Information Systems**. Specific aspects of the G6 staff relating to the medical services include:

(1) security,

(2) communications, and

(3) electronic warfare.

CO-ORDINATION AT THE BRIGADE LEVEL

25. **General**. A considerable portion of a medical unit may deploy within an area that is controlled by others. For example, in a brigade group the service battalion controls the Brigade Support Area (BSA). Thus the medical elements which are deployed in such circumstances are placed under command of the service battalion for defence, rear area security, and movement.

26. **Forward Deployment of Medical Elements**. The evacuation of casualties from the forward battle groups requires the movement of vehicles and the deployment of medical resources in forward areas of the brigade. These activities cannot be performed in isolation – co-ordination with other units is essential.

27. **Allocation of Real Estate and Routes**. The allocation of real estate and routes is an operational prerogative and will be done in accordance with the commander's priorities. Medical units and formations must, therefore, be prepared to compete with a variety of conflicting operational needs. Fortunately, medical elements occupy relatively small areas and conflicts are usually resolved readily. It is incumbent upon medical commanders and staff however, to ensure that operational planners are aware of medical real estate and routes requirements, and that they are considered before plans are issued. This is best done through frequent personal contact.

CHAPTER 7
PATIENT EVACUATION

SECTION 1
ELEMENTS OF PATIENT EVACUATION

GENERAL

1. Patient evacuation is the timely, efficient movement of the sick and wounded from the battlefield and other locations, to medical treatment facilities, and between facilities as required.

2. Evacuation begins at the location where the injury or illness occurs, and continues only as far rearward as the patient's medical condition warrants or the military situation dictates.

PROBLEMS OF PATIENT EVACUATION

3. Patient evacuation is one of the most difficult and important tasks with which the Health Service Support (HSS) is confronted. Problems in patient evacuation include the following:

a. its unfavourable effect on the condition of the patient;

b. critical time limits must often be adhered to;

c. patients must be located and gathered individually, given clothing, meals, shelter, transported (often by hand), protected against discomfort and enemy action, and treated individually;

d. medical resources, including evacuation means, are allotted for optimum capacity but must frequently cope with peak loads;

e. evacuation may not be possible for varying periods due to enemy action, weather or blockage of roads;

f. evacuation must be carried out against the forward flow of combat resources while causing minimum interference;

g. property exchange, particularly of litters, splints and blankets, must be carried out; and

h. effective evacuation is expensive in manpower and resources.

FUNDAMENTALS OF PATIENT EVACUATION

4. Patients can be protected to a degree against the damaging effects of evacuation by the application of the following fundamentals:

a. **Minimum Handling**. Frequent handling increases shock, has an adverse effect on a patient's general condition, and must be reduced to the essentials. Unnecessary moving on and off vehicles must be avoided.

b. **Staging**. A patient's condition deteriorates rapidly under the stress of long, rough land evacuation routes. The process of deterioration is partially controlled by the technique known as "staging". Periodically, during a lengthy evacuation, the patient will be admitted temporarily to a medical facility for sustaining treatment, rest and reassurance. Staging is a matter of time rather than space. The staging interval should be every two hours and not exceed four hours.

c. **Maximum Speed**. If morbidity and mortality are to be minimized, the patient must reach appropriate levels of care as quickly as possible. Speed is achieved by the selection of a rapid mode of transport, movement by the shortest possible route and the minimizing of delays during evacuation.

GENERAL CONSIDERATIONS

5. The functions of evacuation and treatment are dependent on each other, and must always be considered jointly in the planning and execution of medical support.

6. Patients must not be evacuated further to the rear than their physical condition requires or than the military situation demands. Every case evacuated without sufficient reason imposes an unnecessary burden on:

a. the soldiers' unit, which must go short-handed until personnel are returned or replaced;

b. the personnel replacement system, which must procure, equip, train, and transport replacements; and

c. the medical service, which must provide additional berths in evacuation vehicles, additional beds in treatment facilities, and additional trained medical personnel to care for them.

7. Responsibility for evacuation is normally from rear to front. This means that supporting units relieve forward units/facilities of their patients, and should ensure that the evacuation means are located at the forward end of the shuttle ready for immediate use.

CONTROL

8. Evacuation is controlled at the highest level possible to facilitate planning and promote efficiency and effectiveness. The senior medical commander, through subordinate medical commanders and commanding officers of medical evacuation units, controls evacuation.

9. The next higher level of medical support normally, but not always, accomplishes evacuation. Thus, the medical headquarters (HQ) that controls the destination facilities, also controls the evacuation flow and the means of evacuation to the facilities.

10. Co-ordination is vital to patient evacuation and is effected by the formation medical commander in conjunction with members of the formation medical and general staff, and subordinate medical units.

EVACUATION POLICY

11. The functions of evacuation and treatment are also very dependent on the prevailing evacuation policy. The evacuation policy designates the maximum number of days that patients may be held at each level of medical support.

ADMINISTRATION

12. As early as possible in the evacuation process, preferably at the unit level, patients should be disarmed, and both weapons and equipment collected and disposed of in accordance with standing orders. In addition, all other articles in the patient's possession are checked and recorded. Care must be taken to safeguard the personal belongings of individual patients so that no loss occurs.

13. Field medical units are responsible for the feeding, clothing, general welfare and discipline of patients at all times during evacuation.

CHOICE OF TRANSPORTATION

14. The operational situation, type of terrain, road network, availability of railways, and the utilization of air space are important factors that govern the choice of transport for moving patients. In any event, they must be moved by the safest, most comfortable, and most efficient method of transportation available. Speed of evacuation is frequently the overriding consideration. In the immediate area of combat, hand carriage and litters are usually employed. Wheeled or air transport is substituted for manpower as soon as the tactical situation permits. If there is an insufficient number of ambulances, other vehicles returning to the rear may be pressed into service.

15. Transportation by air is the preferred means of evacuating patients in a theatre of operations and is used whenever practicable.

COMMUNICATIONS

16. An efficient system of communications must be established for the control of evacuation, as it is possible during operations that the entire evacuation plan be changed several times during one 24-hour period. As a change of plans may affect several hundred patients, it is essential that a shift from one plan to another be accomplished smoothly and rapidly. Proper communications are necessary for this as well as for the routine conduct of evacuation.

17. Evacuation units must be able to communicate with their sub-unit and with the units/facilities they support. They should also be in a position to communicate with force/formation HQ and ideally, with individual ambulance vehicles.

SECTION 2
LAND EVACUATION

GENERAL

18. Air evacuation has been clearly established as the superior method of transporting patients. However, because aeromedical evacuation may become impossible due to one or more limiting factors, a land evacuation system must be established at all times.

19. The tactical situation often dictates the need for a compromise between, or a combination of, air and land evacuation. Air movement in forward areas may prejudice security and, therefore, be restricted to the rear echelons of combat units. Land evacuation is then used as a link between the place of wounding and the forward limit of air activity.

CHOICE OF VEHICLES

20. The choice of land evacuation vehicles is governed by the following considerations:

a. **Mobility and Protection**. The ambulance must be as mobile as the vehicles of the supported element

and have the same degree of armour and Nuclear Biological and Chemical (NBC) protection.

b. **Security**. Ambulance movement in forward areas should not be visible to the enemy. This is a difficult problem that can be overcome, to a certain extent, by the selection of low silhouette vehicles.

c. **Economy**. Whenever practicable, an ambulance with the greatest carrying capacity should be chosen. In this regard it is noted that standard pattern cargo vehicles are readily converted for the transportation of ambulatory patients and, in an emergency or mass casualty situation, to the movement of litter cases as well.

d. **Comfort**. Patient welfare should, when other factors allow, be an important consideration in the choice of vehicles.

CHAIN OF EVACUATION

21. Land evacuation may take place between:

a. the place of wounding and the Unit Medical station (UMS) either on foot, by hand or litter carriage, by a unit operational or logistics vehicle, or in an ambulance from the medical section;

b. the UMS and the Brigade Medical Station (BMS) in an ambulance from the ambulance company;

c. the UMS and the staging facility, and from there to the BMS if staging is required;

d. local units (without UMSs) and the BMS in unit vehicles or ambulance company vehicles; and

e. the BMS and the field hospital in ambulances provided by the Canadian Medical Group's (CMG) ambulance platoon.

22. If any of the links in the land evacuation chain can be omitted in the interests of speed and minimum handling, this is done. For example, direct evacuation between a staging facility, or even the UMS and the field hospital is effected if possible. The system is flexible and any number of variations are possible providing that the principles of evacuation are not violated. Proper planning indicates inadequacies, and arrangements must be made to supplement existing resources. In a fully developed theatre of operations ambulance units are provided to augment field medical unit resources.

CONTROL

23. Medical commanders, at all levels, are responsible for the control of land evacuation within their areas of influence. The unit medical officer (MO) controls evacuation between the place of wounding and the UMS. The Brigade Surgeon controls evacuation between the UMS and the BMS, and the Group Surgeon controls evacuation between the BMS and the field hospital.

24. The medical battalion or field ambulance is the unit primarily concerned with land evacuation in the forward area. The commanding officers (COs) of these units have the responsibility of moving patients from the UMS to the BMS. They exercise overall control of this function by obtaining information regarding patient locations and numbers, and co-ordinating the use of road networks and evacuation resources. They delegate to their ambulance company commander the immediate control of evacuation in their area of influence. Ambulance company commanders establish their HQs well forward in the brigade area, on the main evacuation route, and probably where routes from the battle groups converge.

AMBULANCE ROUTES

25. The following considerations govern the selection of ambulance routes:

a. the availability of the routes (this must be cleared with the formation staff);

b. the physical characteristics, such as the surface, width, and grades of roads, and the passibility of cross-country routes;

c. the traffic density on available routes or portions thereof;

d. the relative length, compared with other possible routes;

e. the proximity of routes to terrain features or installations that may draw enemy fire, or intersections likely to be interdicted;

f. their general protection from enemy observation and fire; and

g. the cover or concealment of ambulances when they are on the move and while they are parked.

26. At least one alternative evacuation route must be selected.

AMBULANCE SHUTTLE

27. The ambulance shuttle is an efficient method of operating a land evacuation service in forward areas. It may consist of one or more ambulance loading points, one or more ambulance relay posts, such ambulance control posts as may be required, and a basic relay post. Its purposes are to echelon ambulances in depth along evacuation routes and to prevent congestion of ambulances at any one place. The ambulance shuttle is normally controlled and manned by the ambulance company of the field ambulance or medical battalion.

28. **Ambulance Loading Point (ALP).** This point is a location in the shuttle, usually a UMS, where at least one empty ambulance is stationed ready to receive patients for evacuation.

29. **Ambulance Relay Point (ARP).** This post is located where one or more ambulances wait ready to go forward to another ARP or to an ALP. The first ARP should be near enough to the ALP to permit a loaded ambulance to be replaced without delay. ARPs may be

combined with staging posts or located at other suitable points between the UMS and the BMS.

30. **Ambulance Exchange Point (AXP)**. An AXP is a post where patients may be transferred from one type of ambulance to another. This post is normally established by a UMS, in order to transfer patients from tracked to wheeled vehicles. The exchange is required to minimize the rearward movement of tracked ambulances.

31. **Ambulance Control Point (ACP)**. This is placed at a road junction or intersection where the main evacuation route divides into two or more routes going forward. The ACP serves to direct replacement ambulances to the forward areas along the correct route, and thus maintain the proper number of ambulances in each leg of the shuttle. The ambulance platoon headquarters is often used to carry out this ACP function.

32. **Basic Relay Point (BRP)**. The BRP is located furthest to the rear where the bulk of any uncommitted ambulances are stationed. It is normally collocated with the ambulance company headquarters.

33. Figure 7-1 shows the layout of an ambulance shuttle system, in schematic form. An ambulance is loaded at the forward limit of the shuttle and starts towards the rear. As it passes the first ARP, the leading ambulance in that post moves at once to the ALP. As the loaded ambulance on its way to the rear passes the second ARP, the leading ambulance in that post moves forward to the first ARP. This same process is repeated as the loaded ambulance passes each ARP, including the BRP, on its journey to the rear. When the loaded ambulance has discharged its patients (for example, at the BMS), it returns to the BRP.

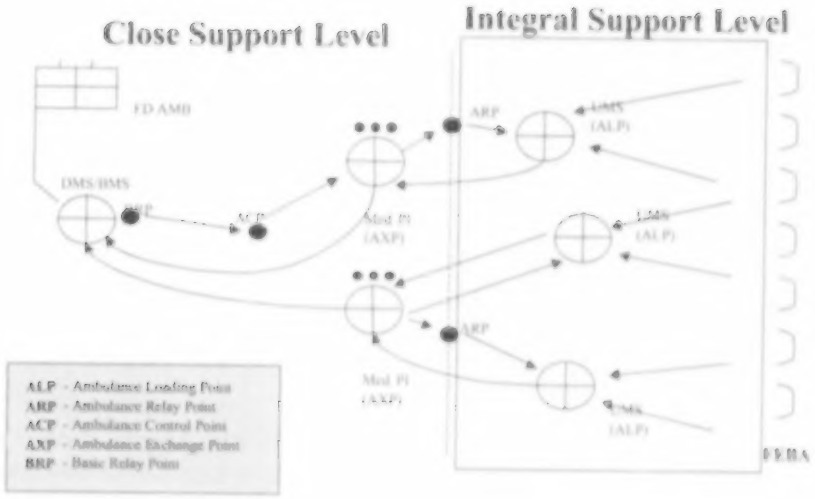

Figure 7-1: Ambulance Shuttle System

SECTION 3
OTHER MODES OF EVACUATION

34. Land ambulance evacuation has been dealt with in some detail. It would be wrong, however, to leave the impression that this is the only mode of evacuation in the field. There is, in fact, no limit to the variety of means that can be used routinely, or in emergencies, for the transportation of patients. These can range from the cable-car in mountain warfare to a log raft in jungle operations. The only limitations are those imposed by initiative, imagination, and utility.

CHAPTER 8
TACTICAL EMPLOYMENT OF MEDICAL UNITS

SECTION 1
GENERAL

PURPOSE AND SCOPE

1. This chapter describes how Land Force Health Service Support (HSS) is employed to provide medical support during all operations of war. There are three recognized operations as well as five transitional phases that link the operations of war together. The operations of war and the transitional phases are:

   a. offensive operations;

   b. defensive operations;

   c. the delay; and

   d. transitional phases:

      (1) advance,

      (2) meeting engagement,

      (3) link-up,

      (4) withdrawal, and

      (5) relief of troops in combat.

2. An understanding of the basic principles, plans, and conduct of land operations is essential to the employment of the medical service, but is beyond the scope of this publication. Further reading on these subjects can be found in B-GL-300-002/FP-000 *Land Force Tactical Doctrine*.

3. **Integral Level Support**. Unit medical services and evacuation systems are explained in the Branch manuals. This

publication will describe tactical medical support beyond the integral level.

BACKGROUND

4. The subject of tactics is inevitably and intentionally not precise. No two operational situations are ever the same, and the solution to the problems presented can never be standardized. This is as true in the field medical setting as it is in the case of combat operations. A plan for the provision of medical support for a campaign or for a specific operation must therefore be the result of a careful appreciation of the operational, logistical and medical situations.

5. The tactical employment of the medical service cannot be dealt with in isolation from other aspects of medical support. Patient management, deployment procedures, and the siting of medical facilities must be considered concurrently with, and as an integral part of medical tactics.

PRESENTATION

6. The operations of war and the transitional phases are dealt with in the following sequence whenever practicable:

a. general comments regarding the nature of the operation;

b. the medical problems with supporting the operation;

c. medical doctrine; and

d. special medical considerations, if any.

SECTION 2
OFFENSIVE OPERATIONS

GENERAL

7. The primary purpose of an attack is to destroy the enemy's capability to resist and to seize ground. An attack may be a separate operation or carried out in conjunction with other types of operations. A commander undertaking an attack possesses the initiative, in that he/she decides the location, time, direction and weight of the combat power to be concentrated.

8. An attack may be directed against the front, flank, or rear of the enemy. Normally the point of main effort is placed where the enemy is the weakest or where the terrain offers possibilities of breaking deep into the enemy's defensive area.

THE PROBLEMS

9. **Medical Plans**. Medical support in forward areas is provided on terrain, the physical reconnaissance of which will not have been possible. The exploitation and pursuit phases of the operation can seldom be planned in detail.

10. **Rescue and Collection**. The majority of casualties in this phase of war occur during the assault. Locating, rescue, and collection of casualties is difficult. When an attack is made over a wide front, the length of patient carriage may be considerable.

11. **Evacuation**. Casualty evacuation resources must be well forward. Evacuation routes should not be coincident with axes of advance. This causes time delays, poorer road surfaces and conditions. Surface evacuation may be hindered as the result of enemy defences, demolitions, and similar delaying tactics.

12. **Surprise**. Surprise is an important factor in the success of an attack. Preparations must be kept as secret as possible. This requirement frequently prevents the movement or establishment of medical facilities until immediately before, or even after, the start of the attack.

13. **Night Attacks**. The problems of locating, collecting, and evacuating casualties during night operations and in particular during a night attack are, by comparison with daylight operations, more difficult. Movement over unfamiliar terrain during hours of darkness reduces the speed with which evacuation elements can perform. The locating of casualties requires a thorough and systematic search. The use of electronic or pyrotechnic devices can be of considerable assistance, but are likely to prejudice security and the tactical plan. Additional resources may be needed for locating, collecting, and evacuating patients, and the Role 1 may have to be reinforced by the supporting medical units. It is particularly important in night operations that all troops know exactly where medical facilities are located. The use of adequate night signs is essential. The medical service must train for night operations and take part in rehearsals.

DOCTRINE

14. **General**. Mobility is the salient requirement of medical support during the attack and pursuit phase of war. To a large extent, the promptness with which forward medical facilities are cleared of patients (they must be empty of patients before the attack is launched) and the efficiency of the evacuation system governs this mobility. The vital link in this system lies between the Unit Medical Station (UMS) and the supporting Role 2 medical station. Another important requirement of medical support is the maintenance of contact with the combat elements.

15. **Support for all Stages**. While the number of casualties is greatest during the assault stage, patients may be introduced into the evacuation system at any time or place during the operation. Medical plans, therefore, must consider support for the assembly, the move forward, the assault, the reorganization, and the exploitation and pursuit stages. Combat Service Support (CSS) units, headquarters (HQs), and administrative elements must also be catered for. Treatment facilities that are established to support the attack must be large enough to handle anticipated heavy patient loads, and at the same time be prepared to move in support of the exploitation and pursuit stages. Commitment of medical facilities in the initial stages of the operation should be minimal. This is to preserve mobility and to achieve the flexibility needed to compensate for unforeseen shifts in areas of casualty density. This can be achieved by arranging for

medical elements in the area, e.g., those associated with the force securing the line of departure, to provide initial support.

16. **Nesting**. Care must be taken to ensure that the wounded are not lost, and that their whereabouts is made known without delay. Soldiers mark the position of a helpless wounded comrade, and pass back the information by word of mouth or radio to section/crew and platoon/troop leaders. These leaders, in turn, advise their sub-unit HQ and the medical team by the fastest means available. The most commonly used method of indicating the location of casualties is to stick the soldier's personal weapon in the ground in a conspicuous place. The less seriously wounded may be able to shout for medical assistance or otherwise bring their predic... nt to the attention of those who can initiate the rescue processes.

17. **Location of Medical Facilities**. Facilities are generally sited further forward in the attack than in the defence or withdrawal phases of war. If the medical elements of the attacking force are required to cover the initial stages of the attack, they should open, on wheels and in skeleton form, as far forward as is compatible with secrecy. In order to avoid having to carry patients forward during the assault and subsequent phases of the operation, medical elements may have to split their resources and function in a leap-frogging fashion. It should be noted, however, that heavy defensive fire by the enemy can prevent, to a degree, the basic deployment of medical resources as far forward as possible.

18. **Timely Opening of Facilities**. Regardless of the limiting factors mentioned above, medical facilities must open to receive patients before the attack occurs. They should not be moving forward at this critical time. Medical Role 1 and 2 elements should, therefore, be awarded a high order of priority for movement forward.

19. **Control of Evacuation**. The majority of ambulances should be situated well forward initially. There are many advantages to attaching medical elements of the supporting medical unit directly to battle groups. Evacuation should converge on one common axis as far forward as possible. This permits the maximum economy of effort and facilitates medical support for the exploitation and pursuit. Centralized control of evacuation is most desirable and should be retained for as long as possible.

20. **Reserve**. In assigning resources for an attack, the medical planner must appreciate the areas where the greatest numbers of casualties may be expected. However, because the accuracy of such estimates is never complete, and because enemy resistance may occur where it is least expected, a reserve of medical resources must be constituted. A reserve, held on wheels and prepared for immediate deployment, is essential for the support of rapid and possible far-reaching exploitation and pursuit of operations.

ROLE 2 SUPPORT

21. **Evacuation**. The most difficult aspect of second level support in the attack is maintaining contact with the UMS. This problem is best overcome by attaching a detachment or section of a medical platoon to the battle group, either collocated with the UMS or located in the A echelon.

22. **Treatment**. The Brigade Medical Station (BMS) is sited as far forward as possible. The medical company forming this facility should be prepared to split its resources and form staging facilities as forward displacement takes place. Facilities move along the main axis, leap-frogging as necessary to remain within supporting distance. Mobility at this level must be achieved by the rapid evacuation of all patients to the third level. The holding of minor sick and wounded in the brigade area is seldom possible during this phase of war.

ROLE 3 SUPPORT

23. The large numbers of surgical patients expected during an attack, and the unlikelihood of enemy penetrations, require that Role 3 facilities be sited well forward initially.

SECTION 3
DEFENSIVE OPERATIONS

24. **General**. Defensive operations are actions taken to prevent, resist, repulse, or destroy an enemy attack. Defence may be necessary in order to:

a. develop more favourable conditions for subsequent offensive operations;

b. economize forces in one area in order to apply decisive pressure in another;

c. destroy or trap a hostile force;

d. deny an enemy entrance to an area; or

e. reduce enemy capability with the least possible losses to friendly forces.

25. The stages of a defensive operation occur in sequence, however the transition from one stage to another is seldom distinct and it often occurs at different times and in different locations in the formation's area of responsibility. The stages are:

a. Covering force stage where a covering force protects the deployment of friendly forces. Normally, the covering force acts as a guard with the task of trading space for time by slowing the enemy's momentum and inflicting maximum damage on the enemy without, in principle, becoming decisively engaged. Because of this task, the guard normally consists of armoured units.

b. The main defence battle including countermoves (reinforcing, blocking and counter-attacking).

PROBLEMS

26. **Collection and Evacuation**. Medical support for defensive operations is generally more difficult than it is for offensive operations. While total patient loads are less, the collection and evacuation processes are complicated because initial combat movements are towards the rear, particularly when the covering force is withdrawn. Medical personnel, who are more directly exposed to enemy action than in the offensive, are permitted less time to rescue, to provide emergency treatment and to remove casualties from the immediate area of combat. Increased casualties among Canadian

Forces Medical Service (CFMS) personnel and litter bearers further reduces the medical treatment and evacuation capabilities.

27. **Enemy Action**. Heavy casualty rates can be expected during the initial stages of an enemy assault and during the counter-attack. The enemy attack may disrupt or delay patient evacuation.

28. **Dispersed Layout**. The depth and dispersion of mobile defences create significant time and space problems in patient evacuation, and in the provision of medical support for the more isolated areas. Forward elements may be forced to withdraw and simultaneously transport their patients to the rear.

29. **Medical Plans**. In the defence the enemy has the initiative as to where and when to attack, and this may prevent accurate prediction of areas where casualty densities will be greatest. This makes medical planning early in the operation difficult.

DOCTRINE

30. **General**. The distribution of forces in depth, as well as the possibility of enemy penetrations of the defensive position, require that medical facilities be located, in general, further to the rear than in offensive operations.

31. **Medical Reserves**. Combat elements placed into reserve play a decisive role in the defence. The location of medical facilities must be carefully co-ordinated so as not to interfere with the movement of such elements, e.g. the counter-attack and blocking forces. Also, medical reserves must be constituted and assigned to the support of these forces. They should not be committed to other roles in the defensive plan and must remain completely mobile. A reserve must also be held in readiness to meet any unexpected course of events.

32. **Protection**. In order to provide an intimate type of support and obtain protection against enemy penetrations, medical facilities should be sited within defended localities, reserve positions, or administrative areas. Defensive operations offer the greatest opportunity for development of the physical protection of medical

facilities. Time and mobility are the only limiting factors in this regard.

33. **Concealment**. The element of surprise is as important in the defence as it is in other phases of war. This substantially affects the use of radio, siting, concealment, and movement of medical units and facilities. Patient evacuation may be restricted to hours of darkness or when enemy observation is otherwise limited. Medical facilities should be so sited initially that they are capable of discharging their missions throughout the entire operation without having to move.

34. **Total Medical Coverage**. Medical support must be provided for all elements of the defensive layout, whether they be mobile or area defence. The medical plan must include, for example, support not only for the main defensive area but also for the covering force troops, reserves, HQ and supporting elements. While emphasis is placed on areas likely to suffer heaviest casualties, the medical service must be prepared to support any part or element of the defence.

35. **Patient Holding**. The possibility exists of patient evacuation being interrupted as the result of enemy activity i.e., deep penetration, and interdiction. This places emphasis on the holding potential of forward medical facilities, the need for evacuation staging, and the provision of outside assistance for the medical service in restoring normal evacuation as quickly as possible.

36. **Medical Support to the Covering Force**. Medical support must provide for the rapid evacuation of casualties to medical facilities in the rear. In most cases, they may require additional means of evacuation, particularly helicopters.

37. A medical facility is set up near the Forward Edge of the Battle Area (FEBA) to accept patients from the covering force when it is withdrawn.

ROLE 2 SUPPORT

38. **The Task**. Role 2 medical support is the task of the supporting medical unit, assisted from time to time by outside resources. The primary task of this level is rapid and efficient evacuation of patients from UMSs to their initial treatment destination.

Supportive treatment is carried out to the extent necessary to sustain the patient during evacuation.

39. **Brigade Medical Station**. One BMS is normally sufficient to support defensive operations, although available evacuation routes or wide dispersion may dictate the need for two. If two are required, the medical company HQ regulates the flow of patients to them. Of particular importance in siting the BMS(s) is the need to place it in relation to evacuation routes, close to landing zones (LZs) where maximum protection can be afforded, and where the likelihood of move during the operation is minimized.

40. **Medical Platoons**. Medical platoons can be employed in a number of ways although one normally operates the BMS described in the previous paragraph. Other possibilities include:

a. **Establishment of Staging Facilities**. If the distance between the BMS and the supported UMS is too great, a medical platoon or subsection is deployed to operate a staging facility.

b. **Reinforcement of Unit Medical Stations**. A section of a medical platoon may be placed under command of a battle group and combined with the UMS to form one medical facility. The factors governing the siting of a UMS would apply to this facility. The most recognizable benefit derived by this grouping of Role 1 and Role 2 resources is the increased treatment and holding potential.

c. **Support of the Covering Force**. A medical platoon(s) or subsection may be deployed forward of the FEBA to collect and stage patients received from UMSs. Alternately, it may be deployed to the rear of the FEBA to accept patients from the covering force when it is withdrawn.

41. **Holding at the Brigade Level**. The wounded are held in the BMS no longer than is necessary to prepare them for further evacuation. As is always the case in forward areas, an ability must exist to hold patients in the event of interrupted evacuation, and while economic aircraft loads and surface convoys are assembled. The

function of the medical company to maintain the fighting strength of the formation within the brigade area, by holding all minor sick and wounded, is considered as being subordinate to the primary function of staging battlefield casualties.

42. **Reserve**. A reserve should always be maintained as it may be required to reinforce or replace a UMS to form a staging facility or to provide limited holding in an emergency. In a field ambulance, the medical company is provided with a fourth medical platoon for this purpose. The reserve platoon(s) can be utilized while in the reserve role. One method is to place it in support of the BMS/Division Medical Station (DMS). The personnel would assist that facility while the equipment would be kept on wheels at a high state of readiness.

43. **Evacuation**. Additional ambulances should be positioned forward to await the arrival of casualties. This assists in avoiding the congestion of facilities.

ROLE 3 SUPPORT

44. **The Task**. Role 3 patient management has been described as the key to the field medical service. It is at this level that initial surgery is performed and hospital care, of limited scope, is provided for the sick and wounded.

45. **Siting**. The siting of Role 3 facilities in a defensive operation is governed by two principal and conflicting factors:

a. **The Tactical Situation**. The field hospital should be beyond artillery range, away from likely targets, and in an area generally free from the din of battle. It should be far enough to the rear so as to avoid the need to move as a result of enemy action.

b. **Time Lag**. The wounded soldier must reach a Role 3 facility as soon as possible and, if initial surgery is to save lives and limbs, the time lag should not exceed six hours. This time lag, which is computed from the time of wounding to arrival on the operating table, must take into consideration not only travelling time but also time spent in the UMS

and staging facilities en route. If necessary, a Field Surgical Team (FST) or an Advanced Surgical Centre (ASC) should be collocated with a DMS or BMS, particularly while the covering force is forward of the FEBA.

46. **Deployment**. When a force or formation of divisional size is fighting a defensive battle, there are two or more field hospitals (belonging to the Canadian Medical Group (CMG)) to provide Role 3 support. These hospitals are deployed to give intimate support for the brigades and in accordance with the siting factors described above. Locations should be such that the flow of patients can be diverted from one hospital to another in the event of one unit being destroyed, damaged, or saturated with patients.

SPECIAL CONSIDERATIONS

47. The sick rate is normally high during a prolonged defence and psychiatric patients may add considerably to the day-to-day medical workload. All levels of the medical service have a responsibility to bring to the attention of commanders any matters detrimental to the health of the troops and contributing to the sick rate.

48. The problems of hygiene and sanitation are likely to be greater in the defence than in other phases of war. Preventive measures in this regard are dealt with in CFP(J) 5(4)-17 *Medical Support for CF Joint and Combined Operations*.

SECTION 4
THE DELAY

GENERAL

49. The delay is defensive in nature; however, it may be conducted in conjunction with offensive operations. It is conducted for any of the following reasons:

a. to slow the enemy's advance and reduce his offensive capability by inflicting casualties;

b. to determine the enemy's main point of attack;

c. to protect the deployment and preparations of forces tasked with other operations;

d. to channel the attacker towards an area or, to place him in a position which leads to his destruction; and

e. in the case of flank or rear guards, delaying actions are fought for one or more of the following reasons:

(1) to allow the main force to react to the new threat;

(2) to prevent the enemy from interfering with the main force;

(3) to stop the enemy from gaining information concerning the actions of the main force; and

(4) to permit the main force to disengage and move away from the enemy during a withdrawal.

50. The delay comprises a combination of defensive and offensive actions. It is continuous fire and movement that forces the enemy to deploy over and over again. Within the formation commander's overall plan, battle groups usually occupy a series of delaying positions from which they may either break contact behind other delaying forces, or withdraw to their next positions in depth. Delaying forces engage the enemy, especially reconnaissance forces, and conduct limited attacks until decisive engagement is threatened. To avoid decisive engagement, forces disengage or fight their way back to the next delaying position. This process is repeated until the mission is accomplished at which time the battle group breaks contact with the enemy, then passes the responsibility to the in-place force. At no time during the delay may a commander accept decisive engagement without the authority of his superior.

PROBLEMS

51. **Time Factor**. The number of casualties removed from any battlefield is dependent upon the time and means available. In the area defence and offensive operations, time is important only as far as it affects the physical well-being of the wounded. In operations where movement is towards the rear, time takes on increased importance, and becomes vital to the accomplishment of the medical mission. Time, in these operations, is likely to be at a premium.

52. **Casualty Figures**. Depending on the type of operation, the size of the force, the enemy reaction and firepower, the terrain and the weather, the casualty figures may range from negligible to very high. As long as the enemy maintains contact with and denies freedom of action to our forces, the operation is one of the most costly.

53. **Evacuation**. Evacuation is more difficult than in other operations because:

a. surface routes available for evacuation are likely to be in continual use by combat and logistics vehicles;

b. evacuation involves greater distances as treatment facilities of the third level are located, initially, further to the rear to avoid having to move while holding post-operative patients;

c. evacuation is uneconomical in resources as return journeys are often impossible and speed is reduced by congestion;

d. rearward movement of combat elements uncovers successive medical facilities in the evacuation chain, thereby precluding their continued operation;

e. communications and control is difficult and may be disrupted by the enemy;

f. the chances of evacuation being interrupted by enemy action are considerable; and

g. the measures taken to overcome the factors impeding evacuation are often beyond the scope of medical authority.

54. **Treatment**. The difficulties of evacuating patients in the delay may result in the wounded soldier not arriving at a surgical facility within the desirable time limit. Morbidity and mortality rates are increased as a result. The frequent absence of proper staging en route and the resulting deterioration of the patient's condition aggravate the problem.

55. **Support for the Medical Service**. The amount of medical resources required in forward areas is large but available support may be limited.

DOCTRINE

56. **General**. In delaying actions the medical service endeavours to evacuate all patients and ensure that its units are intact and functioning efficiently on completion of the operation.

57. **Medical Plans**. Operations to be undertaken at the conclusion of the immediate mission must be considered when plans are made. When the operation involves a rearward passage of lines, careful planning and liaison between the medical commanders of the formations and units involved in the process are required to ensure a co-ordinated effort. Medical plans for the operation should include the constituting of a reserve. This is difficult in view of the considerable demands that are made on medical resources. However, in operations such as these, when the unexpected situation may so easily develop, the availability of a reserve may spell the difference between success and failure of the medical mission.

58. **Control**. Centralized control over all medical resources is vitally important, however, the fluid nature of the operation may make decentralized control unavoidable. Such decentralization should be for the shortest possible period of time and specific instructions to subordinates must be issued before control is delegated. All medical unit COs must be prepared to act on their own initiative should the need arise.

59. **Location of Medical Facilities**. Medical facilities, particularly those of the third line, will be located, initially, further to the rear than in any other phase of war. This is because the general direction of movement is towards the rear, and because surgical facilities should not be subject to relocation while they are providing post-operative care. Role 2 facilities must move to the rear before they are in danger of becoming involved in the actions of withdrawing combat elements. Splitting or leap-frogging medical sub-units may make redeployment. This means that the next rearward location must be occupied and ready to handle patients before the forward location is closed. The locations for successive positions from forward to rear areas must be carefully planned. The frequency of redeployment is determined by the rate of movement, the terrain, and security. As combat elements thin out in forward areas, the medical units redeploy a portion of their resources in the new or intermediate positions. Advance parties, and parts of the unit not immediately involved in the support of forward combat are sent back as early as possible to prepare facilities in the rear.

60. **Evacuation Resources**. The problems associated with evacuation can only be overcome by:

a. co-ordination with and the direction of commanders at all levels;

b. maximum utilization of aeromedical evacuation (the use of helicopters will facilitate evacuation and permit the siting of medical facilities far enough to the rear so that they are not successively uncovered and are unlikely to impede combat);

c. inclusion of ambulances on the list of priorities for movement;

d. utilization of combat personnel and vehicles for collection and evacuation of the wounded in forward areas (troops moving rapidly to the rear are not usually engaged in combat and therefore should be able to assist in the removal of casualties);

e. making provisions for the transportation of slightly wounded, sick, and wounded patients in combat or logistics vehicles; and

f. attachment of ambulances or sub-units of Role 2 medical units to combat units.

61. **Abandoning Patients**. As has been stated, every effort is made to evacuate all patients. However, in the withdrawal operation, more than in any other phase of war, this may not always be possible. Patients that cannot be evacuated must be abandoned but minimum care is left with them: there is no middle course.

62. **Treatment**. Treatment is governed by the following requirements:

a. the provision of surgical treatment of battlefield wounds in an area where post-operative care will not be interrupted by enemy action or the need to move;

b. the limiting of treatment in Role 1 and Role 2 to emergency medical and supportive care designed to prepare the patient for evacuation and sustainment en route; and

c. the avoidance of holding minor sick and wounded for treatment in Role 1 and Role 2 (such cases should be cleared to Role 3 facilities prior to the operation and not evacuated while it is in progress).

ROLE 2 SUPPORT

63. The resources of UMSs are augmented, and the problem of maintaining contact is overcome, by attaching elements of the supporting medical unit to units or battle groups for the duration of the operation. These elements combine with the UMS in transporting patients either directly to their initial treatment destination behind the new position, or to a staging facility. Evacuation, which is beyond the capacity of this combined Role1and Role 2 element, becomes the responsibility of the remainder of the supporting medical unit.

Transfer of patients between the elements takes place at collecting points on the main evacuation axis.

64. Every effort is made to evacuate patients directly to a Role 3 facility. When staging is necessary, medical facilities (tailgate) established by the medical company will provide it. Staging facilities are sited with due regard to the location of planned, likely delaying or intermediate positions on or close to the main axis of movement. When distances are great, or resources inadequate, and this may well be the case when more than one axis is used, the technique of leap-frogging is applied.

ROLE 3 SUPPORT

65. Role 3 facilities are cleared of patients prior to the operation, and deploy in a new location far enough behind the new position that the chances of having to move a second time as the result of enemy action are reduced to a minimum. The general considerations affecting the siting of field hospitals in the defence are equally valid in this situation.

66. Because all patients have evacuated from Role 1 and Role 2 facilities in preparation for the operation, and because there are no deliberate holding in these facilities during the operation, it is probable that field hospitals will become saturated with the minor sick and injured. This problem is likely to be increased by a heavy load of battlefield casualties. Arrangements must be made for the diversion of minor cases to facilities established especially for their care.

SECTION 5
TRANSITIONAL PHASES

ADVANCE AND MEETING ENGAGEMENT GENERAL

67. The advance and the meeting engagement normally take place during the opening stages of a war or campaign when contact is first made with the enemy or it is necessary to regain contact. A rapid but cautious forward movement of the force is involved. The distances involved may be considerable.

68. When a force advances, it usually groups its combat elements into covering force, advance guard (divided into vanguard and main guard), flank and rear guards, and the main body. The covering force could consist of a screen or guard, or both. The primary purpose of a screen is to observe, identify and report information, and is, therefore, based on armoured reconnaissance units. The primary purpose of a guard is to protect following troops by fighting and is also normally based on armoured units.

PROBLEMS

69. **Medical Plans**. The problems associated with planning for the advance are similar in nature but generally greater in scope to those described for the attack. There is usually a lack of information regarding the terrain over which the force will operate. Details concerning enemy strengths, deployment, and capabilities may be similarly limited. The development of complete and specific medical plans to support the operation is therefore difficult, and at times, impossible.

70. **Evacuation**. The evacuation routes are lengthy and are extended as the force advances. Surface transportation of patients is made against the forward flow of combat and logistics elements. This problem could be aggravated by the adoption of only one way traffic. The rate of advance may well place a considerable burden on engineer route maintenance resources. This inevitably has an adverse effect on evacuation. Finally, the speed and flexibility with which the combat units operate complicates the medical service's task of maintaining continuous contact and locating or taking charge of patients.

71. **Treatment**. Extended evacuation routes delay patients' arrival at their treatment destination and increase the need for staging facilities. The policy of bypassing small pockets of resistance may result in the damage or unavailability of evacuation routes and, therefore, the need for an increased patient holding potential along the route. The time lag between place of wounding and the patients' arrival at a surgical facility may be considerable and frequent movement of hospitals and/or maximum use of aeromedical evacuation may be required to reduce it. Treatment facilities may be burdened with the care of abandoned enemy patients and civilians whose medical service has been disrupted by the operation.

DOCTRINE

72. **Deployment of Resources**. Medical resources must, from the outset, be so distributed that they can cover each component of the force and be immediately available to provide support. All medical units and detachments must be prepared to receive patients while on the move or to open on a reduced scale in order that movement may be resumed as soon as possible. Casualties may occur in any part of the advancing column(s) due to enemy ground action, indirect fire, air attacks, demolitions, clandestine activities, vehicle accidents, etc. Plans must therefore be made to support all elements, including the administrative echelons.

73. **Evacuation**. Medical planners must try to obtain movement priorities and road space for surface evacuation. The normal medical evacuation system employing road transport may be difficult because of congestion on the main supply route and the destruction of bridges, culverts, and defiles on main routes. Helicopters, when available, should be considered as a means of evacuation from the unit medical stations to medical treatment facilities in the rear area. The back-haul potential of supply vehicles should be utilized for less serious cases. The impetus of movement in this phase of war may result in the first stage of patient evacuation being made towards the front rather than in the direction of treatment. However, as soon as an opportunity presents itself, patients are either fed into the normal evacuation stream or nested in casualty collecting posts (CCPs) along the main axis to be overtaken by evacuation agencies.

74. Casualty evacuation, particularly from the covering force and advance guard, requires special arrangements. Evacuation resources should be attached to both these elements. Evacuation routes should not coincide with the axis of advance.

75. **Treatment**. Treatment facilities must be placed as far forward as possible prior to the operation and, by leap-frogging, keep within supporting distance as the force advances. Rapid clearing of patients is essential if mobility is to be maintained. The extended surface evacuation routes dictate that all Role 2 level facilities be prepared to stage and hold patients temporarily. "Tailgate" treatment during halts and in harbour areas will frequently be all that can be hoped for in Role 1 and 2 treatment facilities.

76. **Reserves**. A reserve of medical resources is essential and it must be deployed throughout the advancing columns.

77. **Communications**. As radio communication during operations of this nature may be restricted, direct contact between medical units and the combat elements they support must be continuous. Medical commanders should travel with, or close to, combat commanders but must remain in contact with their units and sub-units.

78. **Protection**. Protection of medical resources is as important in the advance as it is in any other phase of war. Protection must be provided against any pockets of enemy that may have been intentionally or accidentally by-passed and against airborne attacks or guerrilla activity.

ROLE 2 SUPPORT

79. The supporting medical element must maintain contact with the battle groups. Patients are transferred from Role 1 to Role 2 resources when the unit moves into a harbour area or when temporary halts are made.

80. When it becomes impossible to transport patients towards the rear, a staging facility is left behind as the advance progresses. It provides sustaining care for patients until such time as normal evacuation can be reintroduced or the facility is overtaken by the BMS.

81. The medical platoon(s), travel(s) with the main body. When opposition is met and the advancing column is deployed for a hasty attack, a BMS is formed. Once the opposition has been cleared, and patients evacuated from UMSs, the platoon moves forward again. As usual, a requirement exists for at least one ambulance to travel at the rear of the main body.

82. The medical company establishes a BMS as far forward as possible before the operation starts. This facility covers the initial stages of the advance. The remaining platoons are held in readiness for deployment further forward along the main axis of advance as justified by the increasing distances. Forward displacement, leap-frog

fashion, continues for as long and as far as the advance develops. The minor sick and wounded are not retained at this level, and clearing of BMSs must be rapid to ensure their mobility. Treatment is restricted to that needed for staging and the temporary holding of patients when normal evacuation is interrupted.

ROLE 3 SUPPORT

83. Field hospital(s) should be located as far forward as possible, before the operation commences. Ideally, one hospital opens to receive patients until the time lag (place of wounding until surgery) exceeds the optimum period. A second hospital, held in reserve during the initial stage, will by then have been moved forward to a position from where proper third level support can be provided. Hospitals keep within supporting distance of the combat elements, i.e. within six hours of place of wounding. The limiting factors are the number of field hospitals held in reserve at the start of the operation and the degree of mobility possessed by the committed hospitals.

WITHDRAWL—GENERAL

84. The aim of the withdrawal is to extract the formation from a position, possibly in close enemy contact, and move it to a new defensive position, with the minimum casualties and interference from the enemy. It is one of the most difficult operations of war as the enemy may have the initiative and air superiority, and the morale of friendly troops may be low.

85. The withdrawal may be conducted deliberately, as part of a pre-arranged plan, or in a more hasty manner, as the result of a change in situation. The basic considerations remain the same whatever the reason for the operation, but the time available for planning and battle procedure naturally differ.

86. The withdrawal may be undertaken for a variety of reasons:

a. to disengage as the aim of the operation has been achieved;

b. to disengage as the continuation of the operation offers no prospect of success;

c. to conform to the movement of adjacent friendly forces;

d. to draw the enemy into an unfavourable tactical situation;

e. to disengage for logistical reasons; and

f. to allow for the use of all or part of the formation elsewhere.

PROBLEMS

87. The problems of the withdrawal are similar to but greater in scope than for the delay.

88. **Time Factor**. The number of casualties removed from any battlefield is dependent upon the time and means available. In the area defence and offensive operations, time is important only as far as it affects the physical well-being of the wounded. In operations where movement is towards the rear, time takes on increased importance, and becomes vital to the accomplishment of the medical mission. Time, in these operations, is likely to be at a premium.

89. **Casualty Figures**. Depending on the type of operation, the size of the force, the enemy reaction and fire power, the terrain and the weather, the casualty figures may range from negligible to very high. As long as the enemy maintains contact with and denies freedom of action to our forces, the operation is one of the most costly.

90. **Evacuation**. Evacuation is more difficult than in other operations because:

a. surface routes available for evacuation are likely to be in continual use by combat and logistics vehicles;

b. evacuation involves greater distances as treatment facilities of the third level are located, initially,

further to the rear to avoid having to move while holding post-operative patients;

c. evacuation is uneconomical in resources as return journeys are often impossible and speed is reduced by congestion;

d. rearward movement of combat elements uncovers successive medical facilities in the evacuation chain, thereby precluding their continued operation;

e. communications and control are difficult and may be disrupted by the enemy;

f. the chances of evacuation being interrupted by enemy action are considerable; and

g. the measures taken to overcome the factors impeding evacuation are often beyond the scope of medical authority.

91. **Treatment**. The difficulties of evacuating patients in withdrawal may result in the wounded soldier not arriving at a surgical facility within the desirable time limit. Morbidity and mortality rates will be increased as a result. The frequent absence of proper staging en route and the resulting deterioration of the patient's condition aggravate the problem.

92. **Support for the Medical Service**. The amount of medical resources required in forward areas is large but available support may be limited.

93. **Control**. In a withdrawal operation, the possible loss of initiative, and the effect of enemy action all contribute towards making control more difficult than in other phases of war.

DOCTRINE

94. **General**. In the withdrawal the medical service endeavours to evacuate all patients and ensure that its units are intact and functioning efficiently on completion of the operation.

95. **Medical Plans**. Operations to be undertaken at the conclusion of the immediate mission must be considered when plans are made. When the operation involves a rearward passage of lines, careful planning and liaison between the medical commanders of the formations and units involved in the process are required to ensure a co-ordinated effort. Medical plans for the operation should include the constituting of a reserve. This is difficult in view of the considerable demands that are made on medical resources. However, in operations such as these, when the unexpected situation may so easily develop, the availability of a reserve may spell the difference between success and failure of the medical mission.

96. **Control**. Centralized control over all medical resources is vitally important, however, the fluid nature of the operation may make decentralized control unavoidable. Such decentralization should be for the shortest possible period of time and specific instructions to subordinates must be issued before control is delegated. All medical unit COs must be prepared to act on their own initiative should the need arise.

97. **Location of Medical Facilities**. Medical facilities, particularly Role 3, are located, initially, further to the rear than in any other operation or phase of war. This is because the direction of movement is towards the rear, and because surgical facilities should not be subject to relocation while they are providing post-operative care. Role 2 facilities must move to the rear before they are in danger of becoming involved in the actions of withdrawing combat elements. Redeployment may be made by splitting or leap-frogging medical sub-units. This means that the next rearward location must be occupied and ready to handle patients before the forward location is closed. The locations for successive positions from forward to rear areas must be carefully planned. The frequency of redeployment is determined by the rate of movement, the terrain, and security. As combat elements thin out in forward areas, the medical units redeploy a portion of their resources in the new or intermediate positions. Advance parties, and parts of the unit not immediately involved in the support of forward combat, are sent back as early as possible to prepare facilities in the rear.

98. **Evacuation Resources**. The problems associated with evacuation can only be overcome by:

a. co-ordination with and the direction of commanders at all levels;

b. maximum utilization of aeromedical evacuation (the use of helicopters will facilitate evacuation and permit the siting of medical facilities far enough to the rear so that they are not successively uncovered and are unlikely to impede combat);

c. inclusion of ambulances on the list of priorities for movement;

d. utilization of combat personnel and vehicles for collection and evacuation of the wounded in forward areas (troops moving rapidly to the rear are not usually engaged in combat and therefore, should be able to assist in the removal of casualties);

e. making provisions for the transportation of slightly wounded, sick, and wounded patients in combat or logistics vehicles; and

f. attachment of ambulances or sub-units of Role 2 medical units to combat units.

99. **Abandoning Patients**. As has been stated, every effort is made to evacuate all patients. However, in the withdrawal operation, more than in any other phase of war, this may not always be possible. Patients that cannot be evacuated must be abandoned but minimum care is left with them: there is no middle course.

100. **Treatment**. Treatment is governed by the following requirements:

a. the provision of surgical treatment of battlefield wounds in an area where post-operative care is not interrupted by enemy action or the need to move;

b. the limiting of treatment in Role 1 and Role 2 to emergency medical and supportive care designed to prepare the patient for evacuation and sustainment en route; and

c. the avoidance of holding minor sick and wounded for treatment in Role1 and Role 2 (such cases should be cleared to Role 3 facilities prior to the operation and not evacuated while it is in progress).

ROLE 2 SUPPORT

101. The resources of UMSs are augmented, and the problem of maintaining contact is overcome, by attaching elements of the supporting medical unit to units or battle groups for the duration of the operation. These elements combine with the UMS in transporting patients either directly to their initial treatment destination behind the new position, or to a staging facility. Evacuation, which is beyond the capacity of this combined Role 1 and Role 2 element, becomes the responsibility of the remainder of the supporting medical unit. Transfer of patients takes place at collecting points on the main evacuation axis.

102. Every effort is made to evacuate patients directly to a Role 3 facility. When staging is necessary, medical facilities (tailgate) established by the medical company provide it. Staging facilities are sited with due regard to the location of planned, likely delaying or intermediate positions on or close to the main axis of movement. When distances are great, or resources inadequate, and this may well be the case when more than one axis is used, the technique of leap-frogging is applied.

ROLE 3 SUPPORT

103. Role 3 facilities are cleared of patients prior to the operation, and deploy in a new location far enough behind the new position that the chances of having to move a second time as the result of enemy action are reduced to a minimum. The general considerations affecting the siting of field hospitals in the defence are equally valid in this situation.

104. Because all patients are evacuated from Role 1 and Role 2 facilities in preparation for the operation, and because there are no deliberate holding in these facilities during the operation, it is probable that field hospitals will become saturated with the minor sick and

injured. This problem is likely to be increased by a heavy load of battlefield casualties. Arrangements must be made for the diversion of minor cases to facilities established especially for their care.

SPECIAL CONSIDERATIONS

105. **Health and Morale**. In the withdrawal phase of war the morale of the force may be low. An efficient medical service will help to overcome this situation. The medical service can expect an increase in sick rates, stress reaction cases, and patients with various psychiatric disorders. Surgeons must work closely with commanders to help in preventing these problems, but medical resources may have to be assigned to the treatment of these cases. Evacuation of psychiatric patients should be expeditious and unobtrusive so as not to adversely affect other servicemen.

106. **Medical Supplies**. Normal replenishment is unlikely during withdrawal operations. Resupply, based on a forecast of requirements for the operation should be effected as early as possible.

LINK-UP—GENERAL

107. Link-ups are conducted to join two friendly forces in enemy controlled territory. It may therefore be necessary to destroy the enemy between these forces before a link-up is established. Both forces may be moving towards one another, or one may be stationary or encircled. They may have the same or differing missions. A link-up could occur under the following circumstances:

a. A link-up between two forces engage in converging attacks may take place when each force captures adjacent objectives, thus completing an encirclement.

b. A link -up with encircled or cut-off forces may take place on the perimeter of the defensive position established by that force.

c. A link-up with an air delivered or infiltrated force may take place on the perimeter of its defensive

position. In this case the link-up is normally followed by a passage of lines or a relief in place.

PROBLEMS

108. **Medical Plans**. For moving forces, the problems associated with planning for the link-up are similar in nature to those described for the advance. There is usually a lack of information regarding the terrain over which the force operates. Details concerning enemy strengths, deployment, and capabilities may be similarly limited. The development of complete and specific medical plans to support the operation will therefore be difficult, and at times impossible. For encircled or infiltrated forces there are limited opportunities to co-ordinate medical planning with the moving force. Medical planners also have to be cognisant of the strict control measures necessary to reduce the risk of fratricide in all link-up operations.

109. **Evacuation**. For moving forces, the evacuation routes are lengthy and are extended as the force advances. Surface transportation of patients is made against the forward flow of combat and logistics elements. This problem could be aggravated by the adoption of only one way traffic. The rate of advance may well place a considerable burden on engineer route maintenance resources. This inevitably has an adverse effect on evacuation. The speed and flexibility with which the combat units operate complicates the medical service's task of maintaining continuous contact and locating or taking charge of patients. Finally, in a link-up with encircled or infiltrated forces there may be large numbers of casualties awaiting evacuation.

110. **Treatment**. Extended evacuation routes delay patients' arrival at their treatment destination and increase the need for staging facilities. The policy of bypassing small pockets of resistance may result in damaged or unavailability of evacuation routes and, therefore, the need for an increased patient holding potential along the route. The time lag between place of wounding and the patients' arrival at a surgical facility may be considerable and frequent movement of hospitals and/or maximum use of aeromedical evacuation may be required to reduce it. Treatment facilities may be burdened with the care of abandoned enemy patients and civilians whose medical service has been disrupted by the operation. For encircled or infiltrated forces, there may be a large number of patients, whose treatment has

been delayed due to their isolation from the rest of the force, resulting in increased morbidity and mortality.

DOCTRINE

111. **Deployment of Resources**. For moving forces, medical resources must, from the outset, be so distributed that they can cover each component of the force and be immediately available to provide support. All medical units and detachments must be prepared to receive patients while on the move or to open on a reduced scale in order that movement may be resumed as soon as possible. Casualties may occur in any part of the moving column(s) due to enemy ground action, indirect fire, air attacks, demolitions, clandestine activities, vehicle accidents, etc. Plans must therefore be made to support all elements, including the administrative echelons. For encircled forces the ability to deploy additional resources prior to the link-up will be limited and the maximum use of aeromedical evacuation will be necessary to reduce morbidity and mortality.

112. **Evacuation**. Medical planners must try to obtain movement priorities and road space for surface evacuation. The normal medical evacuation system employing road transport may be difficult because of congestion on the main supply route and the destruction of bridges, culverts, and defiles on main routes. Helicopters, when available, should be considered as a means of evacuation from the unit medical stations to medical treatment facilities in the rear area. The back-haul potential of supply vehicles should be utilized for less serious cases. The impetus of movement in this phase of war may result in the first stage of patient evacuation being made towards the front rather than in the direction of treatment. However, as soon as an opportunity presents itself, patients will either be fed into the normal evacuation stream or nested in CCPs along the main axis to be overtaken by evacuation agencies. Casualty evacuation, particularly from the covering force and advance guard, requires special arrangements. Evacuation resources should be attached to both these elements. Evacuation routes should not coincide with the axis of advance.

113. **Treatment**. Treatment facilities must be placed as far forward as possible prior to the operation and, by leap-frogging, keep within supporting distance of moving forces. Rapid clearing of patients is essential if mobility is to be maintained. The extended

surface evacuation routes dictate that all second level facilities be prepared to stage and hold patients temporarily. "Tailgate" treatment during halts and in harbour areas will frequently be all that can be hoped for at Role 1 and Role 2. For encircled forces, depending on the tactical situation within the area, casualties not able to be evacuated by air should be held in the minimum number of staging facilities to expedite their evacuation rearward upon link-up.

114. **Reserves**. A reserve of medical resources is essential during link-up operations, particularly when encircled or infiltrated forces are involved.

115. **Communications**. Good communications are critical during link-up operations, and direct contact between medical units and the combat elements they support will be crucial to the success of the medical mission. Medical commanders should travel with, or close to, combat commanders but must remain in contact with their units and sub-units. Contact with encircled forces should be made as early as possible to ensure proper planning for the rapid evacuation of any backlogged patients upon link-up.

ROLE 2 SUPPORT

116. Support for moving forces is similar to that provided for forces in the advance; however, upon linkup with encircled or infiltrated forces the responsibility to evacuate patients will rest with the moving force. In the case of infiltrated forces the integral medical support provided has to be augmented to ensure patients not evacuated by air can be provided with the stabilizing care necessary while awaiting link-up with the moving force.

ROLE 3 SUPPORT

117. The location of the Field hospital(s) should be based on the operation of war that the transitional phase is leading in to (forward for offensive operations, rearward for defensive). Hospitals keep within supporting distance of the combat elements, i.e. within six hours of place of wounding. The limiting factors are the number of field hospitals held in reserve at the start of the operation and the degree of mobility possessed by the committed hospitals. Where it is known

that forces will be isolated for extended periods of time prior to link-up such as in infiltration operations, the attachment of forward surgical team(s) to the medical support element of the infiltrating force may be necessary.

RELIEF OF TROOPS—GENERAL

118. When combat activities are taken over by one force from another, this is referred to as the conduct of relief operations. Relief operations are undertaken when forces:

a. are unable to continue with their mission;

b. are required for operations in an other area;

c. have accomplished their mission;

d. are due for rotation to avoid exhaustion; and

e. are not suitable to accomplish the new task.

119. Relief is normally undertaken in order to sustain the overall level of combat power. Inherent, is the transfer of operational responsibility for a combat mission. The types of relief are defined as:

a. **Relief in Place**. A relief in which all or part of a force is replaced in a sector by an incoming unit.

b. **Forward Passage of Lines**. A relief in which a force advances or attacks through another which is in contact with the enemy.

c. **Rearward Passage of Lines**. A relief where a force effecting a movement to the rear passes through the sector of a unit occupying a defensive position.

d. **Retirement**. A retirement is different from a withdrawal in that it is movement away from an enemy by a force out of contact.

PROBLEMS

120. **General**. During any relief there is a period when congestion increases the vulnerability of the forces involved. The possibility of confusion is inherent as two parallel command systems are operating in one area at the same time.

121. **Medical Plans**. The medical problems associated with planning for relief operations are compounded by the need to plan for two simultaneous operations, each with its own specific and possibly competing requirements.

122. **Evacuation**. The congestion of combat and logistic vehicle from two forces operating in the same sector restricts evacuation routes. Maximum use of aeoromedical evacuation and the restriction of ground ambulance to certain routes/timings may be necessary.

DOCTRINE

123. **Deployment of Resources**. For moving forces, medical resources must, from the outset, be so distributed that they can cover each component of the force and be immediately available to provide support. All medical units and detachments must be prepared to receive patients while on the move or to open on a reduced scale in order that movement may be resumed as soon as possible. Casualties may occur in any part of the moving column(s) due to enemy ground action, indirect fire, air attacks, demolitions, clandestine activities, vehicle accidents, etc. Plans must therefore be made to support all elements, including the administrative echelons.

124. **Evacuation**. Medical planners must try to obtain movement priorities and road space for surface evacuation. The normal medical evacuation system employing road transport may be difficult because of congestion on main routes. Helicopters, when available, should be considered as a means of evacuation from the unit medical stations to medical treatment facilities in the rear area. The back-haul potential of supply vehicles should be utilized for less serious cases.

125. **Treatment**. Treatment facilities must keep within supporting distance of moving forces. Rapid clearing of patients is essential if mobility is to be maintained.

126. **Reserves**. The vulnerability of the force during relief operations necessitates the maintenance of strong reserve.

ROLE 2 SUPPORT

127. **Evacuation**. Support for moving forces is covered under the appropriate transitional phase, (advance/ withdrawal etc.) while considerations for support to the force in place is covered under defensive operations. The priority for medical commanders during relief operations is to ensure that casualties occurring in the moving force are rapidly evacuated allowing the integral and close support medical the mobility necessary to maintain contact with supported forces.

128. **Treatment**. The location of the BMS depends on the operation of war being transitioned to (ie forward for the offense and rearward for the defence).

ROLE 3 SUPPORT

129. The location of the Field hospital(s) should be based on the operation of war that the transitional phase is leading in to (forward for offensive operations, rearward for defensive). Hospitals keep within supporting distance of the combat elements, i.e. within six hours of place of wounding. The limiting factors are the number of field hospitals held in reserve at the start of the operation and the degree of mobility possessed by the committed hospitals.

CHAPTER 9
OPERATIONS IN UNIQUE ENVIRONMENTS

GENERAL

1. As in combat units, the effectiveness of medical units may be reduced when operating in extreme weather and terrain. Normally, medical units are prepared to perform in most environments, however, they may require special purpose equipment. This equipment, primarily shelter and transportation, is issued in type and quantity commensurate with the support mission. During movement and at operating sites in extreme hot or cold temperatures, continuous care is necessary to prevent medical items and supplies from deteriorating. Often, larger numbers of patients result from prolonged exposure to extreme environmental conditions. Medical units are required to treat unusual disease or injury within their capability.

DESERT OPERATIONS

2. **Introduction**. A variety of battlefield conditions apply in hot climatic regions with the emphasis on fast moving operations, possibly over long distances.

3. The health services must have the capacity to rapidly attend, manage and evacuate casualties. The requirement to alleviate the effects of a hot climate is paramount.

4. The possible effects of a hot climate on patient management are considered under the following factors:

a. hazards of a hot climate;

b. pathological effects of heat;

c. effects on patient management;

d. equipment and stores requirement; and

e. training requirements.

5. **Hazards of a Hot Climate**. Hazards of a hot climate to patients include:

a. **Heat Stress**. Patients are likely to have their presentations complicated by incipient or established heat illness. Irrespective of presentation it should be suspected that a patient is in fluid deficit.

b. **Diurnal Temperature Variations**. In desert areas large swings in temperature between day and night occur which have a deleterious effect on patient comfort. Thermal protection for patients during cooler evenings requires consideration and creates an additional logistic burden.

c. **Lack of Water**. A hot/dry climate is encountered in types of terrain varying from sparse vegetation to desert, where water sources may be limited.

6. Hazards to medical facilities include:

a. A hot environment causes difficulties with staff, equipment, supplies, and patient comfort. Third line facilities must have cooling facilities at Wet Bulb Globe Thermometer (WBGT) Indices above 27.5 C (see QSTAG 891). These factors together with a consideration of prevention measures, have been adequately covered in associated documents.

b. Military operations of all types in hot/dry regions are affected by the presence of dust that hampers casualty handling and the maintenance of medical facilities.

7. Pathological effects of relevance to the management of patients include the following:

a. **Dehydration**. A hot climate promotes fluid loss from the body that alters fluid and possibly acid-base balance. The maintenance of adequate hydration takes priority preceding and during treatment.

b. **Electrolyte Disturbance**. An expected finding with most injuries or illnesses, electrolyte imbalance may be exacerbated by a hot climate. It may accompany dehydration due to reduced fluid intake or excessive salt depletion. Thus, monitoring of serum electrolytes will be necessary.

c. **Infection**. A hot climate increases the risk of infection, as there are many vectors that are responsible for zoonotic and human transmission of endemic bacterial, viral, fungal and helminthic diseases. Due consideration must be given to patient personal protection. Thus, a high standard of hygiene with food handling, waste disposal and general housekeeping will be required.

d. **Nutritional Disorders**. Extra demands are placed on human metabolism in hot climates. Generally, individuals require a higher carbohydrate content in their diet.

e. **Psychological Problems**. Patient comfort may deteriorate with increased exposure to heat and this may increase psychological stress. Medical staff may also be required to work in uncomfortable conditions. Due consideration must be given to alleviating the adverse effects of the environment on both patients and medical staff.

8. **Effect of Patient Management**. Because of the hazards, patients require a special assessment of:

a. environmental heat stress;

b. acclimatization;

c. physical activity; and

d. water consumption.

9. Certain individuals exhibit an idiosyncratic, poor response to heat stress and are more liable to heat injury. When identified, such

individuals require special care, and high workloads in extreme conditions are to be avoided.

10. The Nuclear Biological and Chemical (NBC) environment poses particular problems. At a WBGT Index of 27.5 C or above the risk of heat stress is extreme, and clinical judgements between maintaining NBC protection and protecting patients from heat illness may be difficult.

11. Particular considerations during patient management include:

a. **Hydration Status**. On-going assessment of hydration status is required. Monitoring for early detection and correction of fluid imbalance is important. Casualty handling over long distances demands consideration be given to fluid and electrolyte requirements of the patient. Monitoring of urinary output is important to assist detection of significant dehydration. A minimum output of 1.5 litres per day should be maintained.

b. **Patient Well Being**. Hot weather places additional stress on patients at all stages of their management and transportation. Medical staff are required to consider the following:

(1) adequate fluid provision (including IV fluids);

(2) adequate patient rest;

(3) suitable siting of temporary shelters;

(4) patient personal protection from solar radiation, insects and other potential disease vectors; and

(5) a high index of suspicion for, and early investigation of infections diseases, especially those endemic to the area.

c. **Climate Control**. Maximum use of natural ventilation should be made at all times where tactically possible. Temporary casualty shelters should be sited to advantage. Tent flaps should be elevated whenever possible.

12. Whenever practicable, air conditioning or at least electric fans should be provided in vehicles, tents and buildings used for patient management from first line rearwards. Also:

a. Local buildings in an area should be used when possible. (Most buildings would be designed and built for the prevailing local conditions).

b. The provision of cooling stations, particularly when long evacuation distances are necessary, should be considered. These should be designed to provide adequate shelter, rest and fluid replacement. The rise in core temperature suffered during patient transfer may be reversed by patients remaining in the cooling station for two hours before further movement.

13. **Equipment and Stores Requirements**. Special requirements exist for equipment and stores used in patient management in a hot climate:

a. **Tentage**. Tentage should be of a light weight design with maximum ventilation outlets when air conditioning is not available. However, a heavier, tighter weave of material helps to accommodate air conditioning.

b. **Air Conditioning**. Air conditioning units should be provided for vehicles, and for at least third line tents and buildings. Units should be of portable design and capable of operating on AC/DC power. Air conditioning of patient areas must be regarded as mandatory for all third line medical units.

c. **Special Storage**. Special storage will be required for medical stores.

d. **Intravenous (IV) Fluids**. Above a Wet Bulb Globe Thermometer (WBGT) Index of 27.5 C, the stocking levels of IV fluids listed as mandatory in QSTAG 288 must be augmented as follows:

(1) first level—increase by 25 litres;

(2) second level—increase by one litre per two estimated casualties; and

(3) third level—increase by one litre per estimated casualty.

e. **Ambulances**. Units require a larger number of ambulances and direct support of air ambulance squadrons.

14. **Training Requirements**. All personnel require training in the principles of prevention and treatment of heat injury and in the special requirements of casualty handling in a hot climate.

15. All medical personnel should be competent in providing advice on heat illness and heat injury prevention.

16. Training should emphasize the following:

a. environmental medicine;

b. recognition, management and prevention of heat illness;

c. acclimatization; and

d. endemic disease prevention.

MOUNTAIN OPERATIONS

17. Mountain warfare is characterized primarily by the difficulties encountered in movement. The inaccessibility of certain regions restricts troops and limits the strength of forces that can be maintained and deployed.

18. The proportion of litter cases to ambulatory cases increases in mountainous terrain; even a slightly wounded individual may find it difficult to negotiate the terrain. In addition, improvised means such as travois, animals or tramway may have to be used.

19. Aeromedical evacuation of patients should be used whenever possible. The reduction of time between injury and treatment may be a determining factor in the patient's recovery. Therefore, evacuation by air ambulance, which is the safest, most rapid and comfortable means, is most desirable. Aircraft availability, operating capabilities and limitations should be considered prior to operating in mountainous terrain.

JUNGLE OPERATIONS

20. Many of the problems associated with desert operations can also be expected with jungle operations, i.e., the desert environment is hot/dry while the jungle is hot/wet. For that reason, many of the principles of patient management for each situation also apply.

21. The primary hazards to patient management include:

a. A hot/wet climate is characterized by high ambient humidity. Terrain type most likely involves dense vegetation with its associated restrictions on physical movement and casualty evacuation. A high risk of environmental heat stress exists. The availability of natural water may be limited and its quality may be unreliable.

b. With high humidity, medical facilities themselves may easily become breeding grounds for organisms.

22. The greatest problems in providing adequate medical support in jungle operations are the wide dispersal of combat units, inadequate roads, and insecure lines of communication. In addition, larger numbers of litter patients can be expected since even slightly wounded individuals may find it impossible to walk through dense undergrowth. As a result, the patient ordinarily classified as ambulatory may become a litter case. Similar to desert environments, controlled environmental facilities are required for the storage of perishable medical supplies.

23. Helicopters equipped with integral personnel rescue hoists provide the quickest means of extracting patients through a canopy of jungle foliage. Patients may be evacuated to the Unit Medical station (UMS) or, depending upon the extent of injury, to medical facilities located further to the rear.

24. Air ambulances may be placed in support of divisions or brigade groups and normally operate from forward areas.

25. Total reliance on air ambulances is unacceptable. All available means of collection and evacuation must be used.

COLD WEATHER OPERATIONS

26. **General**. Military operations conducted under conditions of cold climate (ambient air temperature below -6 C) differ primarily in the tactical and logistic limitations imposed by adverse climatic conditions, and in special types of equipment, training, and procedures necessary to overcome these limitations. Further reference on this topic is contained in QSTAG 893. Cold accelerates shock and reduces recovery possibilities of exposed patients. Evacuation by litter is extremely difficult under conditions of cold or deep snow, and litter bearers are subject to excessive fatigue. Arctic conditions make surface evacuation of patients, without specially designed vehicles, difficult in winter and virtually impossible in summer due to the unpredictable surface condition of snow, ice and tundra.

27. **Principles**. The principles of medical care in a cold climate are as follows:

a. The most important consideration is to prevent loss of body heat from the time of injury or illness. This includes additional individual protection (e.g., bulky dressings, blankets, sleeping bag), the provision of shelter (e.g., tent, "lean to", ambulance or other vehicle), and external heat (e.g., stove or vehicle heater).

b. To maximize medical outcomes, the optimum time frame for evacuation of patients is likely compressed, particularly if heat loss cannot be

adequately prevented. Forward medical units may have to be sited closer to the Forward Edge of the Battle Area (FEBA), be more mobile and/or more plentiful than in temperate climates. A variety of vehicles may be needed for patient movement (e.g., toboggan, over-snow vehicles, armoured tracked vehicles). The use of helicopters for patient evacuation should be emphasized.

28. **First Aid**. Front line first aid is critical to the prevention of further cold stress or cold related injuries.

29. **Evacuation**. The following evacuation considerations apply:

a. The climatic conditions and terrain increase the requirement for litter bearers (in sufficient number) to be available to the forward elements. If troops are required to move on foot litter bearers with toboggans should accompany them. In addition, a proportion of all vehicles should be fitted with litter kits and heated patient compartments, in particular those vehicles with cross country mobility as they may be the only means of reaching and evacuating casualties.

b. Unit medical resources should have mobility equal to the force they are supporting; medical evacuation units should be deployed farther forward in the combat area as the environmental conditions may slow the evacuation routes. Transportation from the forward medical station to third level care should be done as quickly as possible. Aeromedical evacuation, usually by helicopter, is the preferred evacuation means. Given the circumstances of climate, terrain and vehicle availability, medical facilities should possess the capability of holding and providing resuscitative, stabilizing surgical and sustaining care to patients until evacuation can be safely resumed.

c. Once in the evacuation chain, the patient should be provided with continuous heated shelter. Enclosed

evacuation vehicles should be heated and able to maintain an inside steady temperature of 22 C, regardless of the outdoor ambient temperature. Casualty bags, preferably with a heat source, will be needed for travel or holding in unheated or insufficiently heated areas.

d. Surface evacuation requires special cross country and navigational skills. Environmental (ionospheric disturbance, aurora borealis, magnetic storms) and physical factors of cold environments dictate maximum maintenance and reliability characteristics for radio and communications equipment. Command and control of evacuation resources will assume increased importance.

30. **Treatment**. The following points are emphasized:

a. Casualties subjected to cold stress are usually volume depleted and this may be exacerbated by the primary injury/illness. The initiation of intravenous therapy therefore, as soon as possible, must be considered. Once therapy is started, there must be assurance that the fluids will not be exposed to cold.

b. Drug administration, especially by the parenteral route, may not produce the same effect in the cold-stressed casualty as in the non-stressed casualty.

c. Parenteral analgesia must be used cautiously in the cold-stressed casualty since drug-induced vascular effects could exacerbate the casualty's precarious condition.

d. Wounds in cold extremities do not develop clots as rapidly as identical wounds in warm extremities.

31. **Medical Equipment**. It is necessary to continuously protect some medical equipment (including drugs) against cold exposure, either because the cold damages the equipment or the equipment does not function properly while cold. Heated containers (panniers) may be useful in this respect.

CHAPTER 10
DENTAL OPERATIONS

GENERAL

1. As was previously stated in Chapter 3, a Dental Platoon is now integral to the Field Ambulance. This chapter provides a brief overview of dental operations up to the tactical level.

ROLE

2. The role of the Dental Service in battle is to conserve manpower. In fulfilling this role, the Dental Service takes every opportunity to promote and maintain a high standard of oral health. During combat, dental emergencies, including both disease and trauma, are treated on a continuing basis. Treatment of maxillofacial wounds is undertaken in co-operation with the Medical Services at medical facilities. Prior to and after combat, routine dental treatment is provided to eliminate dental disease and restore optimum function. Finally, the Dental Service provides paramedical assistance to the Medical Services during periods of intense combat, when medical resources are likely to become over-extended.

SCOPE

3. The scope and volume of dental support increases as one moves rearward from the Forward Edge of the Battle Area (FEBA). Personnel engaged in combat require only those aspects of dental support that is essential for the treatment of debilitating dental emergencies and battlefield wounds. Less serious emergencies are not permitted to interfere with the operational mission. The bulk of dental care is provided when personnel are not actively engaged in combat and when the threat of combat is low.

DENTAL OPERATIONS

4. **Dental Plan**. The provision of dental support is a command responsibility. The dental plan is prepared by the Dental Platoon

Commander in concert with the Field Ambulance medical plan and is approved by the Field Ambulance Commanding Officer. The implementation of the plan is a dental responsibility.

5. **Dental Operations**. The Dental Service is responsible to commanders at all levels for:

a. providing dental treatment to maintain a high standard of oral health and to prevent dental disease;

b. co-ordinating the evacuation of dental patients whose condition do not meet the brigade holding policy;

c. preparing, controlling and maintaining dental documents;

d. training dental personnel and providing advice, assistance and supervision in the training of other personnel in all matters pertaining to individual oral health; and

e. providing paramedical assistance to the Medical Service during periods of intense combat as ordered by the commander.

ORGANIZATION AND EMPLOYMENT

6. **Organization**. The organization of the Dental Platoon is shown in the Electronic Battle Box (EBB).

7. **Platoon Headquarters**. The platoon headquarters (HQ) is structured to allow the platoon commander to exercise normal command and control of the platoon, as well as provide a full range of dental treatment.

8. **Treatment Sections**. The treatment sections provide second line treatment for the units of the brigade group. Each section is made up of one dental officer and two dental assistants.

9. **Technical Support Section**. The technical support section provides second line dental technical support services to the platoon.

10. **Employment**. The dental platoon is normally employed in the brigade administration area (BAA). The platoon HQ and technical support section usually co-locate with the medical company. The treatment sections are dispersed within the BAA for security and accessibility. The grouping of dental sections calls for a detailed analysis of dental requirements. Sections may be deployed forward of the administration areas to major units if the operational situation permits.

11. **Deployment**. There is a standard deployment of the dental platoon that should be used as a basis for the deployment of its sections. However, in practice, the deployment has to take into consideration such things as the operational situation, the availability of troops for treatment and when they were last treated, and the locations of units. A typical deployment of a dental platoon takes the following elements into considerations:

a. The platoon HQ remains with the field ambulance HQ. The platoon HQ works part-time as an additional clinic to support the other elements in the area.

b. Two treatment sections are usually grouped with major units and are located in the B echelon area in the Brigade Support Area (BSA).

c. A third treatment section is grouped with the field ambulance and is sited with the medical company HQ. The treatment section provides dental treatment for casualties who pass through the medical evacuation chain. It may also undertake routine care and emergency treatment for medical patients and for personnel in the general area of the medical facility.

d. The fourth treatment section is placed in support of the service battalion. Normally the section co-locates with the transport, supply or maintenance company. However the location depends on the

number of patients and the direction given by the Commanding Officer of the service battalion.

12. Should the tactical situation dictate otherwise, the Commanding Officer of the Field Ambulance could decide to group his dental resources and co-locate them with the Brigade Medical Station (BMS).

13. These suggested deployments are not meant to be restrictive. The deployment of the dental platoon and its resources will depend on the tactical situation, brigade orders and the dental plan.

GENEVA CONVENTIONS

14. Canada accepts the provisions of the Geneva Conventions for the protection of dental personnel and patients. This requires the appropriate marking of dental vehicles and facilities, and the necessary treatment of prisoners of war. Dental personnel should not be employed in any manner that contravenes the provisions of the Geneva Conventions. They may use weapons only to defend themselves or their patients from direct enemy attack. The display of the red cross symbol is a command decision and is in accordance with unit/formation policy.

COMMAND AND CONTROL

15. **Command**. At the brigade group level the dental platoon is a sub-unit to the field ambulance and therefore is under command of the field ambulance commanding officer.

16. **Command Relationship**. Dental elements, which are temporarily grouped with formations or units are normally placed in support of those formations or units and under their command for movement and daily maintenance.

17. **Control**. The dental platoon commander exercises professional and technical control over all dental personnel in the brigade group.

18. **Advisor Role**. The provision of dental professional and technical advice to commanders is an important function of the Dental Service. The dental platoon commander is the brigade dental advisor and has direct access to the commander on dental matters. Prudence must be exercised in determining which matters are presented and the amount of details provided. Normally, routine dental advice is provided to the commander through the Commanding Officer of the Field Ambulance.

ANNEX A
REFERENCES AND STANDARDIZATION AGREEMENTS

1. The following publications are related to and may be used in conjunction with this manual:

a. Canadian Forces Publications:

(1) A-MD-114-000/FP-000 *Manual of Transportation of the Sick and Wounded*,

(2) B-GL-300-000/FP-000 *Canada's Army*,

(3) B-GL-301-002/FP-001 *The Battle Group in Operations*,

(4) B-GG-302-002/FP-001 *Specific Operations Vol 2 Arctic And Sub-Arctic Operations Part 1 Basic Cold Weather Training*,

(5) B-GL-303-002/FP-000 *Staff Duties in the Field*,

(6) B-GL-331-003/FP-001 *Military Symbols*,

(7) B-GL-303-004/FP-001 *Operational Staff Data*,

(8) B-GG-005-004/AF-014 *Movement Doctrine for Canadian Forces Operations—Movement of Force*,

(9) B-GL-304-002/FP-001 *Unit Administration*, and

(10) B-GL-311-001/FP-001 *Administration in Battle*.

b. NATO Publications:

(1) AAP-6(P) *NATO Glossary of Terms and Definitions*,

(2) AAP-6 *Military Symbols*, and

(3) ATP-34 (A) *Land Forces Tactical Doctrine*.

c. ABCA Quadripartite Advisory Publications:

(1) QAP-5 *ABCA Armies Logistics Handbook*, and

(2) QAP-6 *ABCA Armies Logistics Vocabulary and Catalogue of Combat Supplies*.

2. The following standardization agreements have been wholly or partially incorporated into this manual:

NATO-STANAG	ABCA-QSTAG	TITLE
2027	512	Marking of Military Vehicles
2060	248	Identification of Medical Materiel for Medical Installations
2061	423	Procedures for Disposition of Allied Patients by Medical Installations
2087	529	Medical Employment of Air Transport in the Forward Area
2018	435,537	Medical and Dental Supply Procedures
2132	470	Documentation Relative to Medical Evacuation, Treatment and Cause of Death of Patients
2350	230	Morphia Dosage and Casualty Marking

NATO-STANAG	ABCA-QSTAG	TITLE
2879	637	Principles of Medical Policy in the Management of Mass Casualties
3204	44/36A	Aeromedical Evacuation
	423	Equation of Medical Facilities in the Field
	435	Medical Material Management During Patient Evacuation

LIST OF ABBREVIATIONS

ACP	Ambulance Control Point
ALP	Ambulance Loading Point
AIREVAC	Aeromedical evacuation
ARP	Ambulance Relay Point
ASC	Advanced Surgical Centre
AXP	Ambulance Exchange Point
BAA	Brigade Administration Area
BMS	Brigade Medical Station
BRP	Basic Relay Point
BSA	Brigade Support Area
CCP	Casualty Collecting Post
CFDS	Canadian Forces Dental Service
CFMS	Canadian Forces Medical Services
CIMIC	Civil-Military Co-operation
CMG	Canadian Medical Group
COMEDCOM	Corps Medical Command
COMM Z	Communications Zone
CS	Close Support
CSR	Combat Stress Reaction
CSS	Combat Service Support

CTR	Clinical Treatment Regime
CZ	Combat Zone
DMS	Division Medical Station
DSA	Divisional Support Area
EAC	Echelon Above Corps
EBB	Electronic Battle Box
FEBA	Forward Edge of the Battle Area
FST	Field Surgical Team
GS	General Support
LZ	Landing Zone
MIR	Medical Inspection Room
MO	Medical Officer
MOU	Memorandum of Understanding
NMLT	National Medical Liaison Team
NSE	National Support Element
PDC	Patient Decontamination Centre
SMC	Stress Medical Centre
UMS	Unit Medical Station
WBGT	Wet Bulb Globe Thermometer